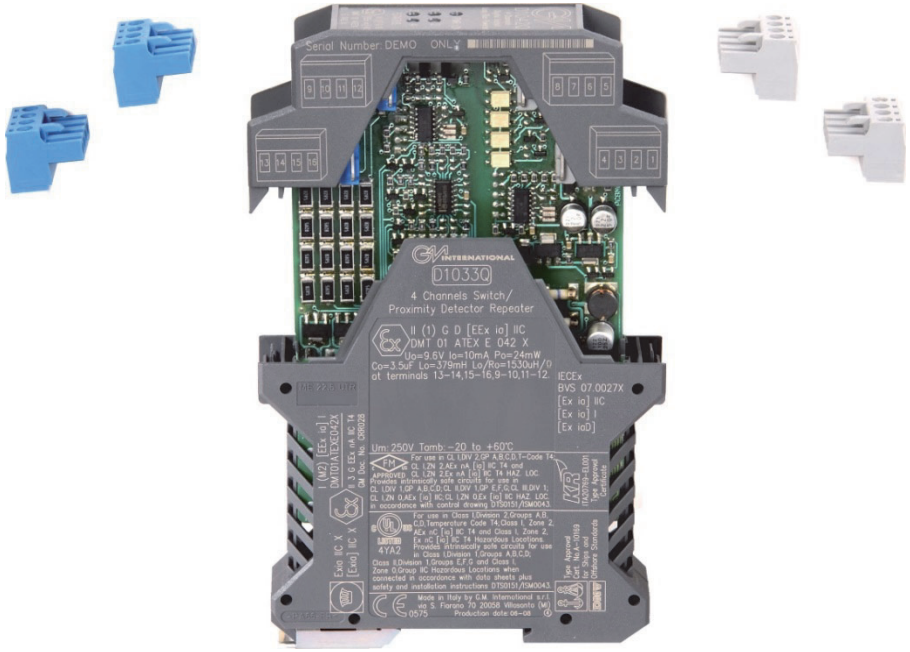

SAFETY INSTRUCTIONS

D1000 series
Instrinsically safe Isolators and Relays

PSD1000 Series Power Supplies

GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

Note: This manual contains only safety instructions.
For the complete installation and use manuals, certifications and data sheets, please refer to www.gmintsrl.com

SUMMARY

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 26.3 V, Io/Isc = 91 mA, Po/Po = 597 mW at terminals 14-15, 10-11.
Uo/Voc = 1.1 V, Io/Isc = 38 mA, Po/Po = 11 mW at terminals 15-16, 11-12.
Ui/Vmax = 30 V, Ii/Imax = 104 mA, Ci/Ci = 1.05 nF, Li/Li = 0 mH, at terminals 15-16, 11-12.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.

Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1010 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	14-15, 10-11	Uo / Voc = 26.3 V		≤	Ui / Vmax
Ch1, Ch2	15-16, 11-12	Uo / Voc = 1.1 V			
Ch1+Ch2	14-11	Uo / Voc = 27.4 V			
Ch1+Ch2	15-12	Uo / Voc = 2.2 V			
Ch1, Ch2	14-15, 10-11	Io / Isc = 91 mA		≤	Ii / Imax
Ch1, Ch2	15-16, 11-12	Io / Isc = 38 mA			
Ch1+Ch2	14-11	Io / Isc = 91 mA			
Ch1+Ch2	15-12	Io / Isc = 38 mA			
Ch1, Ch2	14-15, 10-11	Po / Po = 597 mW		≤	Pi / Pi
Ch1, Ch2	15-16, 11-12	Po / Po = 11 mW			
Ch1+Ch2	14-11	Po / Po = 624 mW			
Ch1+Ch2	15-12	Po / Po = 21 mW			
Ch1, Ch2	14-15, 10-11	Co / Ca = 95 nF Co / Ca = 738 nF Co / Ca = 2.508 µF Co / Ca = 3.95 µF Co / Ca = 738 nF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	15-16, 11-12	Co / Ca = 100 µF Co / Ca = 1000 µF Co / Ca = 1000 µF Co / Ca = 1000 µF Co / Ca = 1000 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1+Ch2	14-11	Co / Ca = 85 nF Co / Ca = 675 nF Co / Ca = 2.258 µF Co / Ca = 675 nF	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)		
Ch1+Ch2	15-12	Co / Ca = 100 µF Co / Ca = 1000 µF Co / Ca = 1000 µF Co / Ca = 1000 µF	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)		

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	14-15, 10-11	Lo / La = 4.3 mH Lo / La = 17.2 mH Lo / La = 34.5 mH Lo / La = 56.6 mH Lo / La = 17.2 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	15-16, 11-12	Lo / La = 11.3 mH Lo / La = 45.3 mH Lo / La = 90.7 mH Lo / La = 148.8 mH Lo / La = 45.3 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1+Ch2	14-11	Lo / La = 4.3 mH Lo / La = 17.2 mH Lo / La = 34.5 mH Lo / La = 17.2 mH	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)		
Ch1+Ch2	15-12	Lo / La = 11.3 mH Lo / La = 45.3 mH Lo / La = 90.7 mH Lo / La = 45.3 mH	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)		
Ch1, Ch2	14-15, 10-11	Lo/Ro = 59.6 µH/Ω Lo/Ro = 238.4 µH/Ω Lo/Ro = 476.8 µH/Ω Lo/Ro = 782.2 µH/Ω Lo/Ro = 238.4 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1, Ch2	15-16, 11-12	Lo/Ro = 3490 µH/Ω Lo/Ro = 13963 µH/Ω Lo/Ro = 27927 µH/Ω Lo/Ro = 45820 µH/Ω Lo/Ro = 13963 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1+Ch2	14-11	Lo/Ro = 54.7 µH/Ω Lo/Ro = 218.9 µH/Ω Lo/Ro = 437.9 µH/Ω Lo/Ro = 218.9 µH/Ω	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)		
Ch1+Ch2	15-12	Lo/Ro = 849 µH/Ω Lo/Ro = 3396 µH/Ω Lo/Ro = 6793 µH/Ω Lo/Ro = 3396 µH/Ω	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)		

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1010 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1, Ch2	15-16, 11-12	Ui / Vmax = 30 V	≥	Uo / Voc
Ch1+Ch2	15-12			
Ch1, Ch2	15-16, 11-12	Ii / Imax = 104 mA	≥	Io / Isc
Ch1+Ch2	15-12			
Ch1, Ch2	15-16, 11-12	Ci = 1.05 µF, Li = 0 mH		
Ch1+Ch2	15-12	Ci = 1.105 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1010 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.
Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1010 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1010 series are repeater power supply smart-hart compatible housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1010 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.

Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1010 must be cleaned only with a damp or antistatic cloth.

Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1010 unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0007**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1010-046

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 26.3 V, Io/Isc = 78.2 mA, Po/Po = 514 mW at terminals 14-15, 10-11.
Uo/Voc = 1.1 V, Io/Isc = 28 mA, Po/Po = 8 mW at terminals 15-16, 11-12.
Ui/Vmax = 30 V, Ii/Imax = 104 mA, Ci/Ci = 1.05 nF, Li/Li = 0 mH, at terminals 15-16, 11-12.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.

Approvals:

DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1010-046 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device

capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	14-15, 10-11	Uo / Voc = 26.3 V		≤	Ui / Vmax
Ch1, Ch2	15-16, 11-12	Uo / Voc = 1.1 V			
Ch1, Ch2	14-15, 10-11	Io / Isc = 78.2 mA		≤	Ii / Imax
Ch1, Ch2	15-16, 11-12	Io / Isc = 28 mA			
Ch1, Ch2	14-15, 10-11	Po / Po = 514 mW		≤	Pi / Pi
Ch1, Ch2	15-16, 11-12	Po / Po = 8 mW			
Ch1, Ch2	14-15, 10-11	Co / Ca = 95 nF Co / Ca = 738 nF Co / Ca = 2.51 µF Co / Ca = 3.95 µF Co / Ca = 738 nF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	15-16, 11-12	Co / Ca = 100 µF Co / Ca = 1000 µF Co / Ca = 1000 µF Co / Ca = 1000 µF Co / Ca = 1000 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2	14-15, 10-11	Lo / La = 5.8 mH Lo / La = 23.2 mH Lo / La = 46.5 mH Lo / La = 76.3 mH Lo / La = 23.2 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	15-16, 11-12	Lo / La = 45.35 mH Lo / La = 181.4 mH Lo / La = 362.8 mH Lo / La = 595.2 mH Lo / La = 181.4 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2	14-15, 10-11	Lo/Ro = 69.2 µH/Ω Lo/Ro = 276.8 µH/Ω Lo/Ro = 553.6 µH/Ω Lo/Ro = 908.3 µH/Ω Lo/Ro = 276.8 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1, Ch2	15-16, 11-12	Lo/Ro = 4654 µH/Ω Lo/Ro = 18618 µH/Ω Lo/Ro = 37236 µH/Ω Lo/Ro = 61090 µH/Ω Lo/Ro = 18618 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1010-046 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1, Ch2	15-16, 11-12	Ui / Vmax = 30 V	≥	Uo / Voc
Ch1, Ch2	15-16, 11-12	Ii / Imax = 104 mA	≥	Io / Isc
Ch1, Ch2	15-16, 11-12	Ci = 1.05 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1010-046 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1010-046 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres -

Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1010-046 series are repeater power supply smart-hart compatible housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1010-046 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1010-046 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1010-046 unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0066**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1012

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 21.5 V, Io/Isc = 93 mA, Po/Po = 496 mW at terminals 13-14, 15-16, 9-10, 11-12.
Uo/Voc = 1.1 V, Io/Isc = 28 mA, Po/Po = 8 mW at terminals .
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1012 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-13	Uo / Voc = 21.5 V		≤	Ui / Vmax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-13	Io / Isc = 93 mA		≤	Ii / Imax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-13	Po / Po = 496 mW		≤	Pi / Pi
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-13	Co / Ca = 176 nF Co / Ca = 1.2 µF Co / Ca = 4.5 µF Co / Ca = 6 µF Co / Ca = 1.2 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-13	Lo / La = 4.1 mH Lo / La = 16.4 mH Lo / La = 32.8 mH Lo / La = 53.8 mH Lo / La = 16.4 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-13	Lo/Ro = 71.7 µH/Ω Lo/Ro = 287 µH/Ω Lo/Ro = 574 µH/Ω Lo/Ro = 941.7 µH/Ω Lo/Ro = 287 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1012 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1012 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1012 is a repeater power supply smart-hart compatible housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D1012Q unit can be mounted with any orientation over the entire ambient temperature range.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of

protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1012 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1012Q unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0070**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1014

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 25.2 V, Io/Isc = 93 mA, Po/Po = 585 mW at terminals 14-15, 10-11.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1014 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	14-15, 10-11	Uo / Voc = 25.2 V		≤	Ui / Vmax
Ch1, Ch2	14-15, 10-11	Io / Isc = 93 mA		≤	Ii / Imax
Ch1, Ch2	14-15, 10-11	Po / Po = 585 mW		≤	Pi / Pi
Ch1, Ch2	14-15, 10-11	Co / Ca = 105 nF Co / Ca = 819 nF Co / Ca = 2.899 µF Co / Ca = 4.15 µF Co / Ca = 819 nF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	14-15, 10-11	Lo / La = 4.1 mH Lo / La = 16.4 mH Lo / La = 32.9 mH Lo / La = 54 mH Lo / La = 16.4 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	14-15, 10-11	Lo/Ro = 60.7 µH/Ω Lo/Ro = 242.9 µH/Ω Lo/Ro = 485.8 µH/Ω Lo/Ro = 797.1 µH/Ω Lo/Ro = 242.9 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1014 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1014 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1014 series are repeater power supply hart compatible housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1014 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.

Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1014 must be cleaned only with a damp or antistatic cloth.

Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1014 unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0052**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1020

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 25.2 V, Io/Isc = 87 mA, Po/Po = 548 mW at terminals 14-15, 10-11.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.

Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1020 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	14-15, 10-11	Uo / Voc = 25.2 V		≤	Ui / Vmax
Ch1, Ch2	14-15, 10-11	Io / Isc = 87 mA		≤	Ii / Imax
Ch1, Ch2	14-15, 10-11	Po / Po = 548 mW		≤	Pi / Pi
Ch1, Ch2	14-15, 10-11	Co / Ca = 105 nF Co / Ca = 819 nF Co / Ca = 2.899 µF Co / Ca = 4.15 µF Co / Ca = 819 nF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	14-15, 10-11	Lo / La = 4.6 mH Lo / La = 18.7 mH Lo / La = 37.5 mH Lo / La = 61.5 mH Lo / La = 18.7 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	14-15, 10-11	Lo/Ro = 64.9 µH/Ω Lo/Ro = 259.6 µH/Ω Lo/Ro = 519.3 µH/Ω Lo/Ro = 851.9 µH/Ω Lo/Ro = 259.6 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1020 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1020 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1020 series are powered isolating driver smart-hart compatible housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D1020 unit can be mounted with any orientation over the entire ambient temperature range.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant

national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1020 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1020 unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0012**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1022

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 25.2 V, Io/Isc = 93 mA, Po/Po = 585 mW at terminals 13-14, 15-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1022 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	13-14, 15-16	Uo / Voc = 25.2 V		≤	Ui / Vmax
Ch1, Ch2	13-14, 15-16	Io / Isc = 93 mA		≤	Ii / Imax
Ch1, Ch2	13-14, 15-16	Po / Po = 585 mW		≤	Pi / Pi
Ch1, Ch2	13-14, 15-16	Co / Ca = 107 nF Co / Ca = 820 nF Co / Ca = 2.9 µF Co / Ca = 4.15 µF Co / Ca = 820 nF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	13-14, 15-16	Lo / La = 4.1 mH Lo / La = 16.4 mH Lo / La = 32.8 mH Lo / La = 53.8 mH Lo / La = 16.4 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	13-14, 15-16	Lo/Ro = 61.2 µH/Ω Lo/Ro = 244.9 µH/Ω Lo/Ro = 489.8 µH/Ω Lo/Ro = 803.7 µH/Ω Lo/Ro = 244.9 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1022 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.
Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.
D1022 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1022 series are loop powered current repeater housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1022 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1022 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.

*For the complete instruction manual **ISM0077**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1030

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nAC IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nAC IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 10.7 V, Io/Isc = 15 mA, Po/Po = 39 mW at terminals 13-14, 15-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.

IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1030 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	13-14, 15-16	Uo / Voc = 10.7 V		≤	Ui / Vmax
Ch1, Ch2	13-14, 15-16	Io / Isc = 15 mA		≤	Ii / Imax
Ch1, Ch2	13-14, 15-16	Po / Po = 39 mW		≤	Pi / Pi
Ch1, Ch2	13-14, 15-16	Co / Ca = 2.23 µF Co / Ca = 15.6 µF Co / Ca = 69 µF Co / Ca = 60 µF Co / Ca = 15.6 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	13-14, 15-16	Lo / La = 172 mH Lo / La = 689 mH Lo / La = 1.379 H Lo / La = 2.263 H Lo / La = 689 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	13-14, 15-16	Lo/Ro = 930 µH/Ω Lo/Ro = 3720 µH/Ω Lo/Ro = 7440 µH/Ω Lo/Ro = 12200 µH/Ω Lo/Ro = 3720 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1030 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1030 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.

Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.

The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative. Any unauthorized modification must be avoided.

INSTALLATION

D1030 series are switch/proximity detector repeater housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D1030 unit can be mounted with any orientation over the entire ambient temperature range.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect output relay contacts checking the load rating to be within the contact maximum rating (2 A 250 Vac 500 VA, 2 A 250 Vdc 80 W resistive load).
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1030 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1030 unit must be connected to SELV or SELV-E supplies.
Relay output contact must be connected to load non exceeding category II overvoltage limits.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0008**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1031

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 10.7 V, Io/Isc = 15 mA, Po/Po = 39 mW at terminals 13-14, 15-16, 9-10, 11-12.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1031 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters	must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Uo / Voc = 10.7 V	≤	Ui / Vmax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Io / Isc = 15 mA	≤	Ii / Imax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Po / Po = 39 mW	≤	Pi / Pi

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Co / Ca = 2.23 µF Co / Ca = 15.6 µF Co / Ca = 69 µF Co / Ca = 60 µF Co / Ca = 15.6 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo / La = 172 mH Lo / La = 689 mH Lo / La = 1.379 H Lo / La = 2.263 H Lo / La = 689 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo/Ro = 930 µH/Ω Lo/Ro = 3720 µH/Ω Lo/Ro = 7440 µH/Ω Lo/Ro = 12200 µH/Ω Lo/Ro = 3720 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1031 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1031 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1031 series are switch/proximity detector repeater housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022 or on customized Termination Board.
D1031 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect output transistors checking the load rating to be within the maximum rating (100 mA at 35 V (≤ 2.0 V voltage drop)).
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.

Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1031 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1031 unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0009**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1032

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nAC IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nAC IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 9.6 V, Io/Isc = 10 mA, Po/Po = 24 mW at terminals 13-14, 15-16, 9-10, 11-12.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1032 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters	must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Uo / Voc = 9.6 V	≤	Ui / Vmax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Io / Isc = 10 mA	≤	Ii / Imax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Po / Po = 24 mW	≤	Pi / Pi
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Co / Ca = 3.598 µF IIC (A, B) Co / Ca = 25.998 µF IIB (C) Co / Ca = 209.998 µF IIA (D) Co / Ca = 99 µF I Co / Ca = 25.998 µF IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo / La = 379 mH IIC (A, B) Lo / La = 1.517 H IIB (C) Lo / La = 3.035 H IIA (D) Lo / La = 4.98 H I Lo / La = 1.517 H IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo/Ro = 1530 µH/Ω IIC (A, B) Lo/Ro = 6150 µH/Ω IIB (C) Lo/Ro = 12310 µH/Ω IIA (D) Lo/Ro = 20200 µH/Ω I Lo/Ro = 6150 µH/Ω IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1032 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1032 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1032 series are switch/proximity detector repeater housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1032 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

Connect output relay contacts checking the load rating to be within the contact maximum rating (2 A 250 Vac 500 VA, 2 A 250 Vdc 80 W resistive load).

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.

Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1032 must be cleaned only with a damp or antistatic cloth.

Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1032 unit must be connected to SELV or SELV-E supplies.
Relay output contact must be connected to load non exceeding category II overvoltage limits.

Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0041**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1033

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 9.6 V, Io/Isc = 10 mA, Po/Po = 24 mW at terminals 13-14, 15-16, 9-10, 11-12.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:

DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1033 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Uo / Voc = 9.6 V		≤	Ui / Vmax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Io / Isc = 10 mA		≤	Ii / Imax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Po / Po = 24 mW		≤	Pi / Pi
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Co / Ca = 3.598 µF Co / Ca = 25.998 µF Co / Ca = 208.998 µF Co / Ca = 99 µF Co / Ca = 25.998 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo / La = 379 mH Lo / La = 1.517 H Lo / La = 3.035 H Lo / La = 4.98 H Lo / La = 1.517 H	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo/Ro = 1530 µH/Ω Lo/Ro = 6150 µH/Ω Lo/Ro = 12310 µH/Ω Lo/Ro = 20200 µH/Ω Lo/Ro = 6150 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1033 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1033 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1033 series are switch/proximity detector repeater housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1033 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect output transistors checking the load rating to be within the maximum rating (100 mA at 35 V).
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1033 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1033 unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0043**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1034

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 9.6 V, Io/Isc = 11 mA, Po/Po = 25 mW at terminals 14-15, 10-11.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1034 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	14-15, 10-11	Uo / Voc = 9.6 V		≤	Ui / Vmax
Ch1, Ch2	14-15, 10-11	Io / Isc = 11 mA		≤	Ii / Imax
Ch1, Ch2	14-15, 10-11	Po / Po = 25 mW		≤	Pi / Pi
Ch1, Ch2	14-15, 10-11	Co / Ca = 3.6 µF Co / Ca = 26 µF Co / Ca = 210 µF Co / Ca = 99 µF Co / Ca = 26 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	14-15, 10-11	Lo / La = 336 mH Lo / La = 1.345 H Lo / La = 2.69 H Lo / La = 4.42 H Lo / La = 1.345 H	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	14-15, 10-11	Lo/Ro = 1449 µH/Ω Lo/Ro = 5790 µH/Ω Lo/Ro = 11590 µH/Ω Lo/Ro = 19020 µH/Ω Lo/Ro = 5790 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1034 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1034 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1034 series are switch/proximity detector interface housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D1034 unit can be mounted with any orientation over the entire ambient temperature range.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.

Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.

Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1034 must be cleaned only with a damp or antistatic cloth.

Any penetration of cleaning liquid must be avoided to prevent damage to the unit.

Any unauthorized card modification must be avoided.

According to EN61010, D1034 unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0053**, datasheet and certifications please refer to our website www.gmintsrl.com*

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 10.9 V, Io/Isc = 1.1 mA, Po/Po = 3 mW at terminals 13-16.
Uo/Voc = 15.5 V, Io/Isc = 13 mA, Po/Po = 48 mW at terminals 14-15.
Uo/Voc = 10.9 V, Io/Isc = 23 mA, Po/Po = 60 mW at terminals 15-16.
Ui/Vmax = 30 V, Ci/Ci = 0 nF, Li/Li = 0 mH, at terminals 13-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.

Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1035 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-16	Uo / Voc = 10.9 V		≤	Ui / Vmax
Ch1	15-16				
Ch1	14-15	Uo / Voc = 15.5 V			
Ch1	13-16	Io / Isc = 1.1 mA		≤	Ii / Imax
Ch1	15-16	Io / Isc = 23 mA			
Ch1	14-15	Io / Isc = 13 mA			
Ch1	13-16	Po / Po = 3 mW		≤	Pi / Pi
Ch1	15-16	Po / Po = 60 mW			
Ch1	14-15	Po / Po = 48 mW			
Ch1	13-16	Co / Ca = 2.05 µF	IIC (A, B)	≥	Ci / Ci device + C cable
Ch1	15-16	Co / Ca = 14.4 µF Co / Ca = 63 µF Co / Ca = 55 µF Co / Ca = 14.4 µF	IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	14-15	Co / Ca = 508 nF Co / Ca = 3.11 µF Co / Ca = 12.5 µF Co / Ca = 34 µF Co / Ca = 8.7 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-16	Lo / La = 29 H Lo / La = 117 H Lo / La = 235 H Lo / La = 406.875 H Lo / La = 124 H	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1	15-16	Lo / La = 72 mH Lo / La = 290 mH Lo / La = 580 mH Lo / La = 995.8 mH Lo / La = 303 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	14-15	Lo / La = 235 mH Lo / La = 941 mH Lo / La = 1.883 H Lo / La = 3.356 H Lo / La = 1.023 H	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	13-16	Lo/Ro = 12000 µH/Ω Lo/Ro = 48100 µH/Ω Lo/Ro = 96200 µH/Ω Lo/Ro = 157900 µH/Ω Lo/Ro = 48100 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1	15-16	Lo/Ro = 594 µH/Ω Lo/Ro = 2378 µH/Ω Lo/Ro = 4757 µH/Ω Lo/Ro = 7804 µH/Ω Lo/Ro = 2378 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	14-15	Lo/Ro = 585 µH/Ω Lo/Ro = 2342 µH/Ω Lo/Ro = 4685 µH/Ω Lo/Ro = 12600 µH/Ω Lo/Ro = 3840 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1035 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1	13-16	Ui / Vmax = 30 V	≥	Uo / Voc
Ch1	13-16	Ci = 0 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1035 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1035 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.

The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.

Any unauthorized modification must be avoided.

INSTALLATION

D1035 is a frequency-pulse isolating repeater housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1035S unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect output transistors checking the load rating to be within the maximum rating (100 mA at 35 V (≤ 1.5 V voltage drop)).
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1035 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1035S unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0079**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1040, D1041, D1042, D1043

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 23.6 V, Io/Isc = 72 mA, Po/Po = 424 mW at terminals 13-14, 15-16, 9-10, 11-12 (D1040Q single channel parameters).
Uo/Voc = 23.6 V, Io/Isc = 49.6 mA, Po/Po = 292 mW at terminals 13-14, 15-16, 9-10, 11-12 (D1041Q single channel parameters).
Uo/Voc = 23.6 V, Io/Isc = 88.2 mA, Po/Po = 519 mW at terminals 13-14, 15-16, 9-10, 11-12 (D1042Q single channel parameters).
Uo/Voc = 23.6 V, Io/Isc = 49.6 mA, Po/Po = 292 mW at terminals 13-14, 15-16, 9-10, 11-12 (D1043Q single channel parameters).
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.

Approvals:

DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D104* series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters	must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Uo / Voc = 23.6 V	≤	Ui / Vmax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12			
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12			
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12			
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Io / Isc = 288 mA	≤	Ii / Imax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Io / Isc = 216 mA		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Io / Isc = 144 mA		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Io / Isc = 72 mA		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Po / Po = 1694 mW	≤	Pi / Pi
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Po / Po = 1271 mW		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Po / Po = 847 mW		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Po / Po = 424 mW		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Co / Ca = 970 nF IIB (C) Co / Ca = 3.5 µF IIA (D) Co / Ca = 4.95 µF I Co / Ca = 970 nF IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12			
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Co / Ca = 130 nF IIC (A, B) Co / Ca = 970 nF IIB (C) Co / Ca = 3.5 µF IIA (D) Co / Ca = 4.95 µF I Co / Ca = 970 nF IIIC (E, F, G)		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12			
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo / La = 1.7 mH IIB (C) Lo / La = 3.4 mH IIA (D) Lo / La = 5.31 mH I Lo / La = 1.7 mH IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo / La = 3 mH IIB (C) Lo / La = 6 mH IIA (D) Lo / La = 9.9 mH I Lo / La = 3 mH IIIC (E, F, G)		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo / La = 1.7 mH IIC (A, B) Lo / La = 6.8 mH IIB (C) Lo / La = 13.7 mH IIA (D) Lo / La = 22.48 mH I Lo / La = 6.8 mH IIIC (E, F, G)		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo / La = 6.8 mH IIC (A, B) Lo / La = 27.4 mH IIB (C) Lo / La = 54.8 mH IIA (D) Lo / La = 90 mH I Lo / La = 27.4 mH IIIC (E, F, G)		

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo/Ro = 83.9 µH/Ω Lo/Ro = 167.9 µH/Ω Lo/Ro = 275.4 µH/Ω Lo/Ro = 83.9 µH/Ω	IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo/Ro = 111.9 µH/Ω Lo/Ro = 223.9 µH/Ω Lo/Ro = 367.3 µH/Ω Lo/Ro = 111.9 µH/Ω	IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo/Ro = 41.9 µH/Ω Lo/Ro = 167.9 µH/Ω Lo/Ro = 335.9 µH/Ω Lo/Ro = 551.2 µH/Ω Lo/Ro = 167.9 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo/Ro = 83.9 µH/Ω Lo/Ro = 335.9 µH/Ω Lo/Ro = 671.9 µH/Ω Lo/Ro = 1102 µH/Ω Lo/Ro = 335.9 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D104* is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D104* must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D104* is a digital output isolators housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D104* can be mounted with any orientation over the entire ambient temperature range.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.

Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.

Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D104* must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D104* must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0020**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1044

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nAC IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nAC IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 0 mV, Io/Isc = 0 µA, Po/Po = 2028000 µW at terminals 13/14-15-16, 9/10-11-12 (Uo, Io, Po equal to the connected Intrinsic Safety circuit).
Ui/Vmax = 60 V, Ii/Imax = 2 A, Ci/Ci = 0 nF, Li/Li = 0 mH, at terminals 13/14-15-16, 9/10-11-12.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1044 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	13/14-15-16, 9/10-11-12	Uo / Voc = 0 V		≤	Ui / Vmax
Ch1, Ch2	13/14-15-16, 9/10-11-12	Io / Isc = 0 mA		≤	Ii / Imax
Ch1, Ch2	13/14-15-16, 9/10-11-12	Po / Po = 0 mW		≤	Pi / Pi
Ch1, Ch2	13/14-15-16, 9/10-11-12	Co / Ca = - Co / Ca = - Co / Ca = - Co / Ca = - Co / Ca = -	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	13/14-15-16, 9/10-11-12	Lo / La = - Lo / La = - Lo / La = - Lo / La = - Lo / La = -	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	13/14-15-16, 9/10-11-12	Lo/Ro = - Lo/Ro = - Lo/Ro = - Lo/Ro = - Lo/Ro = -	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1044 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1, Ch2	13/14-15-16, 9/10-11-12	Ui / Vmax = 60 V	≥	Uo / Voc

Ch1, Ch2	13/14-15-16, 9/10-11-12	Ii / Imax = 2 A	≥	Io / Isc
Ch1, Ch2	13/14-15-16, 9/10-11-12	Ci = 0 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1044 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1044 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.

Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.

The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.

Any unauthorized modification must be avoided.

INSTALLATION

D1044 series are digital relay output housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D1044 unit can be mounted with any orientation over the entire ambient temperature range.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

Connect output relay contacts checking the load rating to be within the contact maximum rating (60 Vdc, 2 A for use in Intrinsic Safety applications; 2 A 250 Vac 500 VA, 2 A 250 Vdc 80 W resistive load for non Intrinsic Safety applications).

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.

Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.

Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1044 must be cleaned only with a damp or antistatic cloth.

Any penetration of cleaning liquid must be avoided to prevent damage to the unit.

Any unauthorized card modification must be avoided.

According to EN61010, D1044 unit must be connected to SELV or SELV-E supplies.

Relay output contact must be connected to load non exceeding category II overvoltage limits.

Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0080**, datasheet and certifications please refer to our website www.gmintsrl.com*

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 18.9 V, Io/Isc = 249 mA, Po/Po = 1173 mW at terminals 13-14, 9-10 Out A.
Uo/Voc = 18.9 V, Io/Isc = 307 mA, Po/Po = 1286 mW at terminals 15-16, 11-12 Out B.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1045 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	13-14, 9-10	Uo / Voc = 18.9 V		≤	Ui / Vmax
Ch1, Ch2	15-16, 11-12				
Ch1, Ch2	13-14, 9-10	Io / Isc = 249 mA		≤	Ii / Imax
Ch1, Ch2	15-16, 11-12	Io / Isc = 307 mA			
Ch1, Ch2	13-14, 9-10	Po / Po = 1173 mW		≤	Pi / Pi
Ch1, Ch2	15-16, 11-12	Po / Po = 1286 mW			
Ch1, Ch2	13-14, 9-10	Co / Ca = 260 nF Co / Ca = 1.6 µF Co / Ca = 6.39 µF Co / Ca = 8.1 µF Co / Ca = 1.6 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	15-16, 11-12				
Ch1, Ch2	13-14, 9-10	Lo / La = 580 µH Lo / La = 2.31 mH Lo / La = 4.62 mH Lo / La = 7.58 mH Lo / La = 2.31 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	15-16, 11-12	Lo / La = 380 µH Lo / La = 1.52 mH Lo / La = 3.03 mH Lo / La = 4.98 mH Lo / La = 1.52 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2	13-14, 9-10	Lo/Ro = 30.3 µH/Ω Lo/Ro = 121.2 µH/Ω Lo/Ro = 242.5 µH/Ω Lo/Ro = 398.1 µH/Ω Lo/Ro = 121.2 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1, Ch2	15-16, 11-12	Lo/Ro = 24.5 µH/Ω Lo/Ro = 98.3 µH/Ω Lo/Ro = 196.6 µH/Ω Lo/Ro = 332.9 µH/Ω Lo/Ro = 101.4 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable)

shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1045 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.
Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.
D1045 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1045 is a digital output isolator housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1045Y unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1045 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1045Y unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0081**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1046

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIB, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIB, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 23.6 V, Io/Isc = 366 mA, Po/Po = 1600 mW at terminals 13-14, 9-10.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1046 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	13-14, 9-10	Uo / Voc = 23.6 V		≤	Ui / Vmax
Ch1, Ch2	13-14, 9-10	Io / Isc = 366 mA		≤	Ii / Imax
Ch1, Ch2	13-14, 9-10	Po / Po = 1600 mW		≤	Pi / Pi
Ch1, Ch2	13-14, 9-10	Co / Ca = 970 nF Co / Ca = 3.5 µF Co / Ca = 4.95 µF Co / Ca = 970 nF	IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	13-14, 9-10	Lo / La = 1.06 mH Lo / La = 2.12 mH Lo / La = 3.48 mH Lo / La = 1.06 mH	IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	13-14, 9-10	Lo/Ro = 66 µH/Ω Lo/Ro = 132.1 µH/Ω Lo/Ro = 218.8 µH/Ω Lo/Ro = 66 µH/Ω	IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1046 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIB, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1046 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1046 is a digital output isolator housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D1046Y unit can be mounted with any orientation over the entire ambient temperature range.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1046 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1046Y unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0082**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1048

SAFETY DESCRIPTION

ATEX: II 3(1)G Ex nA [ia Ga] IIC T4 Gc, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I
IECEx: Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 24.9 V, Io/Isc = 147 mA, Po/Po = 907 mW at terminals 13-16 Out A.
Uo/Voc = 24.9 V, Io/Isc = 110 mA, Po/Po = 681 mW at terminals 14-16 Out B.
Uo/Voc = 24.9 V, Io/Isc = 93 mA, Po/Po = 571 mW at terminals 15-16 Out C.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-15, EN60079-26, EN50303.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-15, IEC60079-26.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1048 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters	must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-16	Uo / Voc = 24.9 V	≤	Ui / Vmax
Ch1	14-16			
Ch1	15-16			
Ch1	13-16	Io / Isc = 147 mA	≤	Ii / Imax
Ch1	14-16	Io / Isc = 110 mA		
Ch1	15-16	Io / Isc = 93 mA		
Ch1	13-16	Po / Po = 907 mW	≤	Pi / Pi
Ch1	14-16	Po / Po = 681 mW		
Ch1	15-16	Po / Po = 571 mW		
Ch1	13-16	Co / Ca = 112 nF IIC (A, B) Co / Ca = 850 nF IIB (C) Co / Ca = 3.01 µF IIA (D) Co / Ca = 4.35 µF I Co / Ca = 860 nF IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1	14-16			
Ch1	15-16			

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-16	Lo / La = 1.65 mH Lo / La = 6.63 mH Lo / La = 13.27 mH Lo / La = 21.78 mH Lo / La = 6.63 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1	14-16	Lo / La = 2.9 mH Lo / La = 11.8 mH Lo / La = 23.6 mH Lo / La = 40.36 mH Lo / La = 12.3 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	15-16	Lo / La = 4.19 mH Lo / La = 16.79 mH Lo / La = 33.58 mH Lo / La = 55.09 mH Lo / La = 16.79 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	13-16	Lo/Ro = 39.2 µH/Ω Lo/Ro = 156.8 µH/Ω Lo/Ro = 313.6 µH/Ω Lo/Ro = 514.6 µH/Ω Lo/Ro = 156.8 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1	14-16	Lo/Ro = 52.2 µH/Ω Lo/Ro = 208.9 µH/Ω Lo/Ro = 417.8 µH/Ω Lo/Ro = 700.6 µH/Ω Lo/Ro = 213.5 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	15-16	Lo/Ro = 62.3 µH/Ω Lo/Ro = 249.4 µH/Ω Lo/Ro = 498.9 µH/Ω Lo/Ro = 818.5 µH/Ω Lo/Ro = 249.4 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1048 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1048 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1048 is a digital output isolator housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1048S unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks

which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1048 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.

*For the complete instruction manual **ISM0096**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1049

SAFETY DESCRIPTION

ATEX: II 3(1)G Ex nA [ia Ga] IIC T4 Gc, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I
IECEx: Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 24.9 V, Io/Isc = 147 mA, Po/Po = 907 mW at terminals 13-16 Out A.
Uo/Voc = 24.9 V, Io/Isc = 110 mA, Po/Po = 681 mW at terminals 14-16 Out B.
Uo/Voc = 24.9 V, Io/Isc = 93 mA, Po/Po = 571 mW at terminals 15-16 Out C.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-15, EN60079-26, EN50303.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-15, IEC60079-26.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1049 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-16	Uo / Voc = 24.9 V		≤	Ui / Vmax
Ch1	14-16				
Ch1	15-16				
Ch1	13-16	Io / Isc = 147 mA		≤	Ii / Imax
Ch1	14-16	Io / Isc = 110 mA			
Ch1	15-16	Io / Isc = 93 mA			
Ch1	13-16	Po / Po = 907 mW		≤	Pi / Pi
Ch1	14-16	Po / Po = 681 mW			
Ch1	15-16	Po / Po = 571 mW			
Ch1	13-16	Co / Ca = 112 nF	IIC (A, B)	≥	Ci / Ci device + C cable
Ch1	14-16	Co / Ca = 850 nF	IIB (C)		
Ch1	15-16	Co / Ca = 3.01 µF	IIA (D)		
		Co / Ca = 4.35 µF	I		
		Co / Ca = 860 nF	IIIC (E, F, G)		

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-16	Lo / La = 1.65 mH Lo / La = 6.63 mH Lo / La = 13.27 mH Lo / La = 21.78 mH Lo / La = 6.63 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1	14-16	Lo / La = 2.9 mH Lo / La = 11.8 mH Lo / La = 23.6 mH Lo / La = 40.36 mH Lo / La = 12.3 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	15-16	Lo / La = 4.19 mH Lo / La = 16.79 mH Lo / La = 33.58 mH Lo / La = 55.09 mH Lo / La = 16.79 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	13-16	Lo/Ro = 39.2 µH/Ω Lo/Ro = 156.8 µH/Ω Lo/Ro = 313.6 µH/Ω Lo/Ro = 514.6 µH/Ω Lo/Ro = 156.8 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1	14-16	Lo/Ro = 52.2 µH/Ω Lo/Ro = 208.9 µH/Ω Lo/Ro = 417.8 µH/Ω Lo/Ro = 700.6 µH/Ω Lo/Ro = 213.5 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	15-16	Lo/Ro = 62.3 µH/Ω Lo/Ro = 249.4 µH/Ω Lo/Ro = 498.9 µH/Ω Lo/Ro = 818.5 µH/Ω Lo/Ro = 249.4 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1049 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1049 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1049 is a digital output isolator housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1049S unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks

which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1049 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1049S unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0097**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1052

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 10.8 V, Io/Isc = 4 mA, Po/Po = 11 mW at terminals 14-15-16, 10-11-12.
Ui/Vmax = 30 V, Ci/Ci = 4.5 nF, Li/Li = 0 mH, at terminals 14-15-16, 10-11-12.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1052 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	14-15-16, 10-11-12	Uo / Voc = 10.8 V		≤	Ui / Vmax
Ch1, Ch2	14-15-16, 10-11-12	Io / Isc = 4 mA		≤	Ii / Imax
Ch1, Ch2	14-15-16, 10-11-12	Po / Po = 11 mW		≤	Pi / Pi
Ch1, Ch2	14-15-16, 10-11-12	Co / Ca = 2.135 µF Co / Ca = 14.995 µF Co / Ca = 65.995 µF Co / Ca = 58 µF Co / Ca = 14.995 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	14-15-16, 10-11-12	Lo / La = 2.541 H Lo / La = 10.167 H Lo / La = 20.335 H Lo / La = 33.362 H Lo / La = 10.167 H	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	14-15-16, 10-11-12	Lo/Ro = 3520 µH/Ω Lo/Ro = 14090 µH/Ω Lo/Ro = 28180 µH/Ω Lo/Ro = 46220 µH/Ω Lo/Ro = 14090 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1052 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1, Ch2	14-15-16, 10-11-12	Ui / Vmax = 30 V	≥	Uo / Voc
Ch1, Ch2	14-15-16, 10-11-12	Ci = 4.5 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1052 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1052 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1052 series are analog signal converter housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D1052 unit can be mounted with any orientation over the entire ambient temperature range.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.

Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.

Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1052 must be cleaned only with a damp or antistatic cloth.

Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1052 unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0015**, datasheet and certifications please refer to our website www.gmintsrl.com*

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 10.8 V, Io/Isc = 4 mA, Po/Po = 11 mW at terminals 14-15-16.
Ui/Vmax = 30 V, Ci/Ci = 4.5 nF, Li/Li = 0 mH, at terminals 14-15-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.

Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-15, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-15, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1053 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	14-15-16	Uo / Voc = 10.8 V		≤	Ui / Vmax
Ch1	14-15-16	Io / Isc = 4 mA		≤	Ii / Imax
Ch1	14-15-16	Po / Po = 11 mW		≤	Pi / Pi
Ch1	14-15-16	Co / Ca = 2.135 µF Co / Ca = 14.995 µF Co / Ca = 65.995 µF Co / Ca = 58 µF Co / Ca = 14.995 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1	14-15-16	Lo / La = 2.541 H Lo / La = 10.167 H Lo / La = 20.335 H Lo / La = 33.362 H Lo / La = 10.167 H	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1	14-15-16	Lo/Ro = 3520 µH/Ω Lo/Ro = 14090 µH/Ω Lo/Ro = 28180 µH/Ω Lo/Ro = 46220 µH/Ω Lo/Ro = 14090 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1053 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1	14-15-16	Ui / Vmax = 30 V	≥	Uo / Voc
Ch1	14-15-16	Ci = 4.5 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1053 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.
Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1053 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1053 is an analog signal converter and trip amplifier housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1053S unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1053 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1053S unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0016**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1054

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nAC IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nAC IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 26.3 V, Io/Isc = 91 mA, Po/Po = 597 mW at terminals 14-15.
Uo/Voc = 1.1 V, Io/Isc = 56 mA, Po/Po = 16 mW at terminals 15-16.
Ui/Vmax = 30 V, Ii/Imax = 128 mA, Ci/Ci = 1.05 nF, Li/Li = 0 mH, at terminals 15-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DNV 04 ATEX 0199 conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx DNV 07.0001 conforms to IEC60079-0, IEC60079-11.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1054 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device

capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	14-15	Uo / Voc = 26.3 V		≤	Ui / Vmax
Ch1	15-16	Uo / Voc = 1.1 V			
Ch1	14-15	Io / Isc = 91 mA		≤	Ii / Imax
Ch1	15-16	Io / Isc = 56 mA			
Ch1	14-15	Po / Po = 597 mW		≤	Pi / Pi
Ch1	15-16	Po / Po = 16 mW			
Ch1	14-15	Co / Ca = 95 nF Co / Ca = 738 nF Co / Ca = 2.508 µF Co / Ca = 738 nF	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1	15-16	Co / Ca = 100 µF Co / Ca = 1000 µF Co / Ca = 1000 µF Co / Ca = 1000 µF	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)		
Ch1	14-15	Lo / La = 4.3 mH Lo / La = 17.2 mH Lo / La = 34.5 mH Lo / La = 17.2 mH	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1	15-16	Lo / La = 11.3 mH Lo / La = 45.3 mH Lo / La = 90.7 mH Lo / La = 45.3 mH	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)		
Ch1	14-15	Lo/Ro = 59.6 µH/Ω Lo/Ro = 238.4 µH/Ω Lo/Ro = 476.8 µH/Ω Lo/Ro = 238.4 µH/Ω	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1	15-16	Lo/Ro = 2327 µH/Ω Lo/Ro = 9309 µH/Ω Lo/Ro = 18618 µH/Ω Lo/Ro = 9309 µH/Ω	IIC (A, B) IIB (C) IIA (D) IIIC (E, F, G)		

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1054 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1	15-16	Ui / Vmax = 30 V	≥	Uo / Voc
Ch1	15-16	Ii / Imax = 128 mA	≥	Io / Isc
Ch1	15-16	Ci = 1.05 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1054 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1054 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1054 is a repeater power supply and trip amplifier housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1054S unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1054 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1054S unit must be connected to SELV or SELV-E supplies.
Relay output contact must be connected to load non exceeding category II overvoltage limits.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0067**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1060

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 10.9 V, Io/Isc = 1.1 mA, Po/Po = 3 mW at terminals 13-16.
Uo/Voc = 15.5 V, Io/Isc = 13 mA, Po/Po = 48 mW at terminals 14-15.
Uo/Voc = 10.9 V, Io/Isc = 23 mA, Po/Po = 60 mW at terminals 15-16.
Ui/Vmax = 30 V, Ci/Ci = 0 nF, Li/Li = 0 mH, at terminals 13-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1060 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device

capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters	must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-16	Uo / Voc = 10.9 V	≤	Ui / Vmax
Ch1	15-16			
Ch1	14-15	Uo / Voc = 15.5 V		
Ch1	13-16	Io / Isc = 1.1 mA	≤	Ii / Imax
Ch1	15-16	Io / Isc = 23 mA		
Ch1	14-15	Io / Isc = 13 mA		
Ch1	13-16	Po / Po = 3 mW	≤	Pi / Pi
Ch1	15-16	Po / Po = 60 mW		
Ch1	14-15	Po / Po = 48 mW		
Ch1	13-16	Co / Ca = 2.05 µF IIC (A, B) Co / Ca = 14.4 µF IIB (C) Co / Ca = 63 µF IIA (D) Co / Ca = 55 µF I Co / Ca = 14.4 µF IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1	15-16			
Ch1	14-15	Co / Ca = 508 nF IIC (A, B) Co / Ca = 3.11 µF IIB (C) Co / Ca = 12.5 µF IIA (D) Co / Ca = 34 µF I Co / Ca = 3.11 µF IIIC (E, F, G)		
Ch1	13-16	Lo / La = 29 H IIC (A, B) Lo / La = 117 H IIB (C) Lo / La = 235 H IIA (D) Lo / La = 406.875 H I Lo / La = 117 H IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1	15-16	Lo / La = 72 mH IIC (A, B) Lo / La = 290 mH IIB (C) Lo / La = 580 mH IIA (D) Lo / La = 995.8 mH I Lo / La = 290 mH IIIC (E, F, G)		
Ch1	14-15	Lo / La = 235 mH IIC (A, B) Lo / La = 941 mH IIB (C) Lo / La = 1.883 H IIA (D) Lo / La = 3.356 H I Lo / La = 941 mH IIIC (E, F, G)		
Ch1	13-16	Lo/Ro = 12000 µH/Ω IIC (A, B) Lo/Ro = 48100 µH/Ω IIB (C) Lo/Ro = 96200 µH/Ω IIA (D) Lo/Ro = 157900 µH/Ω I Lo/Ro = 48100 µH/Ω IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1	15-16	Lo/Ro = 594 µH/Ω IIC (A, B) Lo/Ro = 2378 µH/Ω IIB (C) Lo/Ro = 4757 µH/Ω IIA (D) Lo/Ro = 7804 µH/Ω I Lo/Ro = 2378 µH/Ω IIIC (E, F, G)		
Ch1	14-15	Lo/Ro = 585 µH/Ω IIC (A, B) Lo/Ro = 2342 µH/Ω IIB (C) Lo/Ro = 4685 µH/Ω IIA (D) Lo/Ro = 12600 µH/Ω I Lo/Ro = 2342 µH/Ω IIIC (E, F, G)		

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1060 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1	13-16	Ui / Vmax = 30 V	≥	Uo / Voc
Ch1	13-16	Ci = 1.05 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable

and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1060 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.
Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.
D1060 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1060 is a frequency-pulse converter, repeater and trip amplifier housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1060S unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect output transistors checking the load rating to be within the maximum rating (100 mA at 35 Vdc (≤ 1.5 V voltage drop)).
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1060 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1060S unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0054**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1061

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 3.7 V, Io/Isc = 225 mA, Po/Po = 206 mW at terminals 13-14, 15-16.
Ui/Vmax = 30 V, Ii/Imax = 282 mA, Ci/Ci = 0 nF, Li/Li = 0 mH, at terminals 13-14, 15-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:

DNV 04 ATEX 0199 conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx DNV 07.0001 conforms to IEC60079-0, IEC60079-11.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1061 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters	must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-14, 15-16	Uo / Voc = 3.7 V	≤	Ui / Vmax
Ch1	13-14, 15-16	Io / Isc = 225 mA	≤	Ii / Imax
Ch1	13-14, 15-16	Po / Po = 206 mW	≤	Pi / Pi
Ch1	13-14, 15-16	Co / Ca = 100 µF IIC (A, B) Co / Ca = 1000 µF IIB (C) Co / Ca = 1000 µF IIA (D)	≥	Ci / Ci device + C cable
Ch1	13-14, 15-16	Lo / La = 700 µH IIC (A, B) Lo / La = 2.8 mH IIB (C) Lo / La = 5.6 mH IIA (D)	≥	Li / Li device + L cable
Ch1	13-14, 15-16	Lo/Ro = 173 µH/Ω IIC (A, B) Lo/Ro = 693 µH/Ω IIB (C) Lo/Ro = 1386 µH/Ω IIA (D)	≥	Li/Ri device and L cable/R cable

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1061 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1	13-14, 15-16	Ui / Vmax = 30 V	≥	Uo / Voc
Ch1	13-14, 15-16	Ii / Imax = 282 mA	≥	Io / Isc
Ch1	13-14, 15-16	Ci = 0 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1061 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.
Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.
D1061 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1061 is a fieldbus isolating repeater housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D1061S unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1061 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1061S unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0068**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1061-077

SAFETY DESCRIPTION

ATEX: II 3(1)G Ex nA [ia Ga] IIC T4 Gc, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I
IECEx: Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 3.7 V, Io/Isc = 93 mA, Po/Po = 85 mW at terminals 13-14, 15-16.
Ui/Vmax = 30 V, Ii/Imax = 136 mA, Ci/Ci = 0 nF, Li/Li = 0 mH, at terminals 13-14, 15-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-15, EN60079-26, EN50303.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-15, IEC60079-26.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1061-077 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-14, 15-16	Uo / Voc = 3.7 V		≤	Ui / Vmax
Ch1	13-14, 15-16	Io / Isc = 93 mA		≤	Ii / Imax
Ch1	13-14, 15-16	Po / Po = 85 mW		≤	Pi / Pi
Ch1	13-14, 15-16	Co / Ca = 100 µF Co / Ca = 1000 µF Co / Ca = 1000 µF Co / Ca = 1000 µF Co / Ca = 1000 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1	13-14, 15-16	Lo / La = 4.1 mH Lo / La = 16.7 mH Lo / La = 33.4 mH Lo / La = 54.9 mH Lo / La = 16.7 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-14, 15-16	Lo/Ro = 422.7 µH/Ω Lo/Ro = 1690.9 µH/Ω Lo/Ro = 3381.9 µH/Ω Lo/Ro = 5548.4 µH/Ω Lo/Ro = 1690.9 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1061-077 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1	13-14, 15-16	Ui / Vmax = 30 V	≥	Uo / Voc
Ch1	13-14, 15-16	Ii / Imax = 136 mA	≥	Io / Isc
Ch1	13-14, 15-16	Ci = 0 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1061-077 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1061-077 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1061-077 is a fieldbus isolating repeater housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1061S-077 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.

Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1061-077 must be cleaned only with a damp or antistatic cloth.

Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1061S-077 unit must be connected to SELV or SELV-E supplies.

D1062

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 25.9 V, Io/Isc = 90 mA, Po/Po = 576 mW at terminals 14-16.
Uo/Voc = 27 V, Io/Isc = 90 mA, Po/Po = 576 mW at terminals 15-16 (when used with 2 wire constant current supply mode connecting terminals 13-14).
Uo/Voc = 1.1 V, Io/Isc = 12 µA, Po/Po = 2138000 µW at terminals 15-16 (when used with 3 wires transducer or 2 wires AC sensor connecting terminals 9-14).
Ui/Vmax = 30 V, Ci/Ci = 0 nF, Li/Li = 1.5 µH, at terminals 15-16 (when used with 3 wires transducer or 2 wires AC sensor connecting terminals 9-14).
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.

Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-15, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1062 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	15-16	Uo / Voc = 27 V		≤	Ui / Vmax
Ch1	14-16	Uo / Voc = 25.9 V			
Ch1	15-16	Uo / Voc = 1.1 V			
Ch1	15-16	Io / Isc = 90 mA		≤	Ii / Imax
Ch1	14-16				
Ch1	15-16	Io / Isc = 12 µA			
Ch1	15-16	Po / Po = 576 mW		≤	Pi / Pi
Ch1	14-16				
Ch1	15-16	Po / Po = 4 µW			
Ch1	15-16	Co / Ca = 90 nF Co / Ca = 705 nF Co / Ca = 2.33 µF Co / Ca = 3.75 µF Co / Ca = 705 nF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1	14-16	Co / Ca = 100 nF Co / Ca = 770 nF Co / Ca = 2.63 µF Co / Ca = 4.02 µF Co / Ca = 770 nF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	15-16	Co / Ca = 100 µF Co / Ca = 1000 µF Co / Ca = 1000 µF Co / Ca = 1000 µF Co / Ca = 1000 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	15-16	Lo / La = 4.4 mH	IIC (A, B)	≥	Li / Li device + L cable
Ch1	14-16	Lo / La = 17.9 mH Lo / La = 35.8 mH Lo / La = 58.7 mH Lo / La = 17.9 mH	IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	15-16	Lo / La = 1 H Lo / La = 1 H Lo / La = 1 H Lo / La = 1 H Lo / La = 1 H	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	15-16	Lo/Ro = 56.8 µH/Ω Lo/Ro = 227.3 µH/Ω Lo/Ro = 454.7 µH/Ω Lo/Ro = 746.1 µH/Ω Lo/Ro = 227.3 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1	14-16	Lo/Ro = 61.7 µH/Ω Lo/Ro = 247.1 µH/Ω Lo/Ro = 494.3 µH/Ω Lo/Ro = 811 µH/Ω Lo/Ro = 247.1 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1	15-16	Lo/Ro = 11*10^6 µH/Ω Lo/Ro = 46*10^6 µH/Ω Lo/Ro = 93*10^6 µH/Ω Lo/Ro = 152*10^6 µH/Ω Lo/Ro = 46*10^6 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1062 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1	15-16	Ui / Vmax = 30 V	≥	Uo / Voc
Ch1	15-16	Ci = 0 µF, Li = 1.5 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1062 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1062 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1062 is a vibration transducer interface housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1062S unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks

which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1062 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1062S unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0094**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1063

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 17.3 V, Io/Isc = 199.6 mA, Po/Po = 864 mW at terminals 9-10-11-12-13-14.
Uo/Voc = 17.3 V, Io/Isc = 8 mA, Po/Po = 35 mW at terminals 13-14.
Ui/Vmax = 30 V, Ci/Ci = 0 nF, Li/Li = 0 mH, at terminals 13-14.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DNV 04 ATEX 0199 conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx DNV 07.0001 conforms to IEC60079-0, IEC60079-11.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1063 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	9-10-11-12-13-14	Uo / Voc = 17.3 V		≤	Ui / Vmax
Ch1	13-14				
Ch1	9-10-11-12-13-14	Io / Isc = 199.6 mA		≤	Ii / Imax
Ch1	13-14	Io / Isc = 8 mA			
Ch1	9-10-11-12-13-14	Po / Po = 864 mW		≤	Pi / Pi
Ch1	13-14	Po / Po = 35 mW			
Ch1	9-10-11-12-13-14	Co / Ca = 351 nF Co / Ca = 2.058 µF Co / Ca = 8.498 µF	IIC (A, B) IIB (C) IIA (D)	≥	Ci / Ci device + C cable
Ch1	13-14	Co / Ca = 353 nF Co / Ca = 2.06 µF Co / Ca = 8.5 µF	IIC (A, B) IIB (C) IIA (D)		

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	9-10-11-12-13-14	Lo / La = 850 µH Lo / La = 3.4 mH Lo / La = 6.8 mH	IIC (A, B) IIB (C) IIA (D)	≥	Li / Li device + L cable
Ch1	13-14	Lo / La = 300 mH Lo / La = 1.2 H Lo / La = 2.4 H	IIC (A, B) IIB (C) IIA (D)		
Ch1	9-10-11-12-13-14	Lo/Ro = 41.2 µH/Ω Lo/Ro = 164.8 µH/Ω Lo/Ro = 329.6 µH/Ω	IIC (A, B) IIB (C) IIA (D)	≥	Li/Ri device and L cable/R cable
Ch1	13-14	Lo/Ro = 1020 µH/Ω Lo/Ro = 4110 µH/Ω Lo/Ro = 8220 µH/Ω	IIC (A, B) IIB (C) IIA (D)		

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1063 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1	13-14	Ui / Vmax = 30 V	≥	Uo / Voc
Ch1	13-14	Ci = 0 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1063 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1063 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1063 is a strain gauge bridge isolating repeater housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D1063S unit can be mounted with any orientation over the entire ambient temperature range.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.

Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.

Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1063 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1063S unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0069**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1064

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 5.9 V, Io/Isc = 196 mA, Po/Po = 576 mW at terminals 9-10-11-12-13-14.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-15, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1064 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	9-10-11-12-13-14	Uo / Voc = 5.9 V		≤	Ui / Vmax
Ch1	9-10-11-12-13-14	Io / Isc = 196 mA		≤	Ii / Imax
Ch1	9-10-11-12-13-14	Po / Po = 576 mW		≤	Pi / Pi
Ch1	9-10-11-12-13-14	Co / Ca = 39 µF Co / Ca = 996 µF Co / Ca = 996 µF Co / Ca = 996 µF Co / Ca = 996 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1	9-10-11-12-13-14	Lo / La = 930 µH Lo / La = 3.71 mH Lo / La = 7.42 mH Lo / La = 12.17 mH Lo / La = 3.71 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1	9-10-11-12-13-14	Lo/Ro = 247 µH/Ω Lo/Ro = 494.1 µH/Ω Lo/Ro = 810.6 µH/Ω Lo/Ro = 247 µH/Ω	IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1064 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIB, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of

250 Vrms.
Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.
D1064 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1064 is a strain gauge bridge isolating converter housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1064S unit strain gauge bridge isolating converter operates at low level measuring signals; for best performance, install it far from heat sources (heat dissipating equipment) and wide temperature excursions, for example at the bottom of a cabinet with heat dissipating equipment, if any, at the top.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1064 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1064S unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0088**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1072

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 10.8 V, Io/Isc = 9 mA, Po/Po = 24 mW at terminals 13-14-15-16, 9-10-11-12.
Ui/Vmax = 18 V, Ci/Ci = 6 nF, Li/Li = 0 mH, at terminals 13-14-15-16, 9-10-11-12.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-15, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not

exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1072 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters	must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	13-14-15-16, 9-10-11-12	Uo / Voc = 10.8 V	≤	Ui / Vmax
Ch1, Ch2	13-14-15-16, 9-10-11-12	Io / Isc = 9 mA	≤	Ii / Imax
Ch1, Ch2	13-14-15-16, 9-10-11-12	Po / Po = 24 mW	≤	Pi / Pi
Ch1, Ch2	13-14-15-16, 9-10-11-12	Co / Ca = 2.134 µF IIC (A, B) Co / Ca = 14.994 µF IIB (C) Co / Ca = 65.994 µF IIA (D) Co / Ca = 58 µF I Co / Ca = 14.994 µF IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	13-14-15-16, 9-10-11-12	Lo / La = 468 mH IIC (A, B) Lo / La = 1.874 H IIB (C) Lo / La = 3.749 H IIA (D) Lo / La = 6.151 H I Lo / La = 1.874 H IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	13-14-15-16, 9-10-11-12	Lo/Ro = 1510 µH/Ω IIC (A, B) Lo/Ro = 6050 µH/Ω IIB (C) Lo/Ro = 12100 µH/Ω IIA (D) Lo/Ro = 19850 µH/Ω I Lo/Ro = 6050 µH/Ω IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1072 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1, Ch2	13-14-15-16, 9-10-11-12	Ui / Vmax = 18 V	≥	Uo / Voc
Ch1, Ch2	13-14-15-16, 9-10-11-12	Ci = 6 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1072 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1072 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1072 series are temperature signal converter housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1072 unit temperature signal converter operates at low level measuring signals; for best performance, install it far from heat sources (heat dissipating equipment) and wide temperature excursions, for example at the bottom of a cabinet with heat dissipating equipment, if any, at the top.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1072 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1072 unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0018**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1073

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nAC IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nAC IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 10.8 V, Io/Isc = 9 mA, Po/Po = 24 mW at terminals 13-14-15-16.
Ui/Vmax = 18 V, Ci/Ci = 6 nF, Li/Li = 0 mH, at terminals 13-14-15-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-15, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1073 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters	must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-14-15-16	Uo / Voc = 10.8 V	≤	Ui / Vmax
Ch1	13-14-15-16	Io / Isc = 9 mA	≤	Ii / Imax
Ch1	13-14-15-16	Po / Po = 24 mW	≤	Pi / Pi

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13-14-15-16	Co / Ca = 2.134 µF Co / Ca = 14.994 µF Co / Ca = 65.994 µF Co / Ca = 58 µF Co / Ca = 14.994 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1	13-14-15-16	Lo / La = 468 mH Lo / La = 1.874 H Lo / La = 3.749 H Lo / La = 6.151 H Lo / La = 1.874 H	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1	13-14-15-16	Lo/Ro = 1510 µH/Ω Lo/Ro = 6050 µH/Ω Lo/Ro = 12100 µH/Ω Lo/Ro = 19850 µH/Ω Lo/Ro = 6050 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

When used with separate powered intrinsically safe devices, check that maximum allowable voltage, current (Ui/Vmax, Ii/Imax) of the D1073 series Associated Apparatus are not exceeded by the safety parameters (Uo/Voc, Io/Isc) of the Intrinsically Safe device, indicated in the table below:

Ch1	13-14-15-16	Ui / Vmax = 18 V	≥	Uo / Voc
Ch1	13-14-15-16	Ci = 6 µF, Li = 0 mH		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1073 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1073 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1073 is a temperature signal converter and trip amplifier housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D1073S unit temperature signal converter and trip amplifier operates at low level measuring signals; for best performance, install it far from heat sources (heat dissipating equipment) and wide temperature excursions, for example at the bottom of a cabinet with heat dissipating equipment, if any, at the top.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres -

Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1073 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1073S unit must be connected to SELV or SELV-E supplies.
Relay output contact must be connected to load non exceeding category II overvoltage limits.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0019**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1080

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nAC IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nAC IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 15.8 V, Io/Isc = 109 mA, Po/Po = 428 mW at terminals 13-16, 9-12.
Uo/Voc = 15.8 V, Io/Isc = 13 mA, Po/Po = 51 mW at terminals 14-16, 13-15, 10-12, 9-11.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1080 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

<table>
<tr><th colspan="2">Terminals</th><th>Associated Apparatus Parameters</th><th>must be</th><th>Haz. Area/Haz. Locations Device Parameters</th></tr>
<tr><td>Ch1, Ch2</td><td>13-16, 9-12</td><td rowspan="3">Uo / Voc = 15.8 V</td><td rowspan="3">≤</td><td rowspan="3">Ui / Vmax</td></tr>
<tr><td>Ch1, Ch2</td><td>13-15, 9-11</td></tr>
<tr><td>Ch1, Ch2</td><td>14-16, 10-12</td></tr>
<tr><td>Ch1, Ch2</td><td>13-16, 9-12</td><td>Io / Isc = 109 mA</td><td rowspan="3">≤</td><td rowspan="3">Ii / Imax</td></tr>
<tr><td>Ch1, Ch2</td><td>13-15, 9-11</td><td rowspan="2">Io / Isc = 13 mA</td></tr>
<tr><td>Ch1, Ch2</td><td>14-16, 10-12</td></tr>
<tr><td>Ch1, Ch2</td><td>13-16, 9-12</td><td>Po / Po = 428 mW</td><td rowspan="3">≤</td><td rowspan="3">Pi / Pi</td></tr>
<tr><td>Ch1, Ch2</td><td>13-15, 9-11</td><td rowspan="2">Po / Po = 51 mW</td></tr>
<tr><td>Ch1, Ch2</td><td>14-16, 10-12</td></tr>
<tr><td>Ch1, Ch2</td><td>13-16, 9-12</td><td rowspan="3">Co / Ca = 478 nF IIC (A, B)
Co / Ca = 2.88 µF IIB (C)
Co / Ca = 11.6 µF IIA (D)
Co / Ca = 13.6 µF I
Co / Ca = 2.88 µF IIIC (E, F, G)</td><td rowspan="3">≥</td><td rowspan="3">Ci / Ci device
+ C cable</td></tr>
<tr><td>Ch1, Ch2</td><td>13-15, 9-11</td></tr>
<tr><td>Ch1, Ch2</td><td>14-16, 10-12</td></tr>
</table>

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	13-16, 9-12	Lo / La = 3 mH Lo / La = 12 mH Lo / La = 24 mH Lo / La = 39.27 mH Lo / La = 12.04 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	13-15, 9-11	Lo / La = 217.6 mH Lo / La = 870.7 mH Lo / La = 1.741 H Lo / La = 3.24 H Lo / La = 870.7 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2	14-16, 10-12	Lo / La = 217.6 mH Lo / La = 870.7 mH Lo / La = 1.741 H Lo / La = 2.857 H Lo / La = 870.7 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2	13-16, 9-12	Lo/Ro = 83 µH/Ω Lo/Ro = 332 µH/Ω Lo/Ro = 664 µH/Ω Lo/Ro = 1090 µH/Ω Lo/Ro = 332 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1, Ch2	13-15, 9-11	Lo/Ro = 706 µH/Ω Lo/Ro = 2820 µH/Ω Lo/Ro = 5650 µH/Ω Lo/Ro = 9270 µH/Ω Lo/Ro = 2820 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2	14-16, 10-12				

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1080 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1080 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.

Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.

The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.

Any unauthorized modification must be avoided.

INSTALLATION

D1080 is a liquid presence detector interface housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

D1080D unit can be mounted with any orientation over the entire ambient temperature range.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant

national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect output relay contacts checking the load rating to be within the contact maximum rating (2 A 250 Vac 500 VA, 2 A 250 Vdc 80 W resistive load).
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1080 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1080D unit must be connected to SELV or SELV-E supplies.
Relay output contact must be connected to load non exceeding category II overvoltage limits.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0055**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1081

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 15.8 V, Io/Isc = 109 mA, Po/Po = 428 mW at terminals 13-16, 9-12.
Uo/Voc = 15.8 V, Io/Isc = 13 mA, Po/Po = 51 mW at terminals 14-16, 13-15, 10-12, 9-11.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1081 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters	must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	13-16, 9-12	Uo / Voc = 15.8 V	≤	Ui / Vmax
Ch1, Ch2	13-15, 9-11			
Ch1, Ch2	14-16, 10-12			
Ch1, Ch2	13-16, 9-12	Io / Isc = 109 mA	≤	Ii / Imax
Ch1, Ch2	13-15, 9-11	Io / Isc = 13 mA		
Ch1, Ch2	14-16, 10-12			
Ch1, Ch2	13-16, 9-12	Po / Po = 428 mW	≤	Pi / Pi
Ch1, Ch2	13-15, 9-11	Po / Po = 51 mW		
Ch1, Ch2	14-16, 10-12			

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	13-16, 9-12	Co / Ca = 478 nF Co / Ca = 2.88 µF Co / Ca = 11.6 µF Co / Ca = 13.6 µF Co / Ca = 2.88 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	13-15, 9-11				
Ch1, Ch2	14-16, 10-12				
Ch1, Ch2	13-16, 9-12	Lo / La = 3 mH Lo / La = 12 mH Lo / La = 24 mH Lo / La = 39.27 mH Lo / La = 12 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	13-15, 9-11	Lo / La = 217.6 mH Lo / La = 870.7 mH Lo / La = 1.741 H Lo / La = 3.24 H Lo / La = 870.7 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2	14-16, 10-12	Lo / La = 217.6 mH Lo / La = 870.7 mH Lo / La = 1.741 H Lo / La = 2.857 H Lo / La = 870.7 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2	13-16, 9-12	Lo/Ro = 83 µH/Ω Lo/Ro = 332 µH/Ω Lo/Ro = 664 µH/Ω Lo/Ro = 1090 µH/Ω Lo/Ro = 332 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1, Ch2	13-15, 9-11	Lo/Ro = 706 µH/Ω Lo/Ro = 2820 µH/Ω Lo/Ro = 5650 µH/Ω Lo/Ro = 9270 µH/Ω Lo/Ro = 2820 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2	14-16, 10-12				

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1081 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

D1081 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1081 is a liquid presence detector interface housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1081D unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks

which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect output transistors checking the load rating to be within the maximum rating (100 mA at 35 V (≤ 1.5 V voltage drop)).
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1081 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1081D unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0055**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1092

SAFETY DESCRIPTION

ATEX: II 3G Ex nAC IIC T4 Gc
IECEx: Ex nAC IIC T4 Gc, non-sparking electrical equipment.
Approvals:
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

WARNING

D1092 series are electrical apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C.
D1092 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair suitability for Zone 2.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1092 series are relay output module housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1092 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Installation and wiring must be in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

Connect load relay contacts checking the load rating to be within the contact maximum rating (3 A 250 Vac 750 VA, 3 A 125 Vdc 120 W resistive load).
To prevent relay contacts from damaging, connect an external protection (fuse or similar), chosen according to the relay breaking capacity diagram from datasheet.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1092 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
Relay output contact must be connected to load non exceeding category II overvoltage limits.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0091**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1092-069

SAFETY DESCRIPTION

ATEX: II 3G Ex nAC IIC T4 Gc
IECEx: Ex nAC IIC T4 Gc, non-sparking electrical equipment.
Approvals:
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

WARNING

D1092-069 series are electrical apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C.
D1092-069 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair suitability for Zone 2.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1092-069 series are relay output module housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1092-069 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Installation and wiring must be in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect load relay contacts checking the load rating to be within the contact maximum rating (3 A 250 Vac 750 VA, 3 A 125 Vdc 120 W resistive load).

To prevent relay contacts from damaging, connect an external protection (fuse or similar), chosen according to the relay breaking capacity diagram from datasheet.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1092-069 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
Relay output contact must be connected to load non exceeding category II overvoltage limits.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0101**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1093

SAFETY DESCRIPTION

ATEX: II 3G Ex nAC IIC T4 Gc
IECEx: Ex nAC IIC T4 Gc, non-sparking electrical equipment.
Approvals:
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

WARNING

D1093 is electrical apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C.
D1093 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair suitability for Zone 2.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1093 is a relay output module housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1093S unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Installation and wiring must be in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect load relay contacts checking the load rating to be within the contact maximum rating (3 A 250 Vac 750 VA, 3 A 125 Vdc 120 W resistive load, for output and fault).Connect fault relay contacts checking the load rating to be within the contact maximum rating (3 A 250 Vac 750 VA, 3 A 125 Vdc 120 W resistive load, for output and fault).
To prevent relay contacts from damaging, connect an external protection (fuse or similar), chosen according to the relay breaking capacity diagram from datasheet.

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1093 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, D1093S unit must be connected to SELV or SELV-E supplies.
Relay output contact must be connected to load non exceeding category II overvoltage limits.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0093**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1130

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nAC IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nAC IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 10.7 V, Io/Isc = 15 mA, Po/Po = 39 mW at terminals 13-14, 15-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1130 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	13-14, 15-16	Uo / Voc = 10.7 V		≤	Ui / Vmax
Ch1, Ch2	13-14, 15-16	Io / Isc = 15 mA		≤	Ii / Imax
Ch1, Ch2	13-14, 15-16	Po / Po = 39 mW		≤	Pi / Pi
Ch1, Ch2	13-14, 15-16	Co / Ca = 2.23 µF Co / Ca = 15.6 µF Co / Ca = 69 µF Co / Ca = 60 µF Co / Ca = 15.6 µF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2	13-14, 15-16	Lo / La = 172 mH Lo / La = 689 mH Lo / La = 1.379 H Lo / La = 2.263 H Lo / La = 689 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2	13-14, 15-16	Lo/Ro = 930 µH/Ω Lo/Ro = 3720 µH/Ω Lo/Ro = 7440 µH/Ω Lo/Ro = 12200 µH/Ω Lo/Ro = 3720 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1130 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.
Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.
D1130 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1130 series are ac supply switch/proximity detector repeater housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1130 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect output relay contacts checking the load rating to be within the contact maximum rating (2 A 250 Vac 500 VA, 2 A 250 Vdc 80 W resistive load).
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1130 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
Relay output contact must be connected to load non exceeding category II overvoltage limits.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0048**, datasheet and certifications please refer to our website www.gmintsrl.com*

D1180

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nAC IIC T4 Gc

IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nAC IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 15.8 V, Io/Isc = 109 mA, Po/Po = 428 mW at terminals 13-16, 9-12.
Uo/Voc = 15.8 V, Io/Isc = 13 mA, Po/Po = 51 mW at terminals 14-16, 13-15, 10-12, 9-11.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.

Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1180 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2	13-16, 9-12	Uo / Voc = 15.8 V		≤	Ui / Vmax
Ch1, Ch2	13-15, 9-11				
Ch1, Ch2	14-16, 10-12				
Ch1, Ch2	13-16, 9-12	Io / Isc = 109 mA		≤	Ii / Imax
Ch1, Ch2	13-15, 9-11	Io / Isc = 13 mA			
Ch1, Ch2	14-16, 10-12				
Ch1, Ch2	13-16, 9-12	Po / Po = 428 mW		≤	Pi / Pi
Ch1, Ch2	13-15, 9-11	Po / Po = 51 mW			
Ch1, Ch2	14-16, 10-12				
Ch1, Ch2	13-16, 9-12	Co / Ca = 478 nF	IIC (A, B)	≥	Ci / Ci device + C cable
Ch1, Ch2	13-15, 9-11	Co / Ca = 2.88 µF	IIB (C)		
Ch1, Ch2	14-16, 10-12	Co / Ca = 11.6 µF	IIA (D)		
		Co / Ca = 13.6 µF	I		
		Co / Ca = 2.88 µF	IIIC (E, F, G)		
Ch1, Ch2	13-16, 9-12	Lo / La = 3 mH	IIC (A, B)	≥	Li / Li device + L cable
		Lo / La = 12 mH	IIB (C)		
		Lo / La = 24 mH	IIA (D)		
		Lo / La = 39.27 mH	I		
		Lo / La = 12 mH	IIIC (E, F, G)		
Ch1, Ch2	13-15, 9-11	Lo / La = 217.6 mH	IIC (A, B)		
		Lo / La = 870.7 mH	IIB (C)		
		Lo / La = 1.741 H	IIA (D)		
		Lo / La = 3.24 H	I		
		Lo / La = 870.7 mH	IIIC (E, F, G)		
Ch1, Ch2	14-16, 10-12	Lo / La = 217.6 mH	IIC (A, B)		
		Lo / La = 870.7 mH	IIB (C)		
		Lo / La = 1.741 H	IIA (D)		
		Lo / La = 2.857 H	I		
		Lo / La = 870.7 mH	IIIC (E, F, G)		
Ch1, Ch2	13-16, 9-12	Lo/Ro = 83 µH/Ω	IIC (A, B)	≥	Li/Ri device and L cable/R cable
		Lo/Ro = 332 µH/Ω	IIB (C)		
		Lo/Ro = 664 µH/Ω	IIA (D)		
		Lo/Ro = 1090 µH/Ω	I		
		Lo/Ro = 332 µH/Ω	IIIC (E, F, G)		
Ch1, Ch2	13-15, 9-11	Lo/Ro = 706 µH/Ω	IIC (A, B)		
Ch1, Ch2	14-16, 10-12	Lo/Ro = 2820 µH/Ω	IIB (C)		
		Lo/Ro = 5650 µH/Ω	IIA (D)		
		Lo/Ro = 9270 µH/Ω	I		
		Lo/Ro = 2820 µH/Ω	IIIC (E, F, G)		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

D1180 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.
Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.
D1180 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

D1180 is an ac supply liquid presence detector interface housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
D1180D unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect output relay contacts checking the load rating to be within the contact maximum rating (2 A 250 Vac 500 VA, 2 A 250 Vdc 80 W resistive load).
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1180 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
Relay output contact must be connected to load non exceeding category II overvoltage limits.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0057**, datasheet and certifications please refer to our website www.gmintsrl.com*

PSD1000

SAFETY DESCRIPTION

ATEX: II 3G Ex nA IIC T4 Gc, non-sparking electrical equipment.

Approvals:
G.M. International CRR028 conforms to EN60079-0, EN60079-15.

WARNING

PSD1000 is electrical apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C.
PSD1000 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.
Warning: substitution of components may impair suitability for Zone 2.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

PSD1000 is a switching power supply housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
PSD1000 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Installation and wiring must be in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of PSD1000 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, PSD1000 unit must be connected to SELV or SELV-E supplies.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

*For the complete instruction manual **ISM0089**, datasheet and certifications please refer to our website www.gmintsrl.com*

PSD1001

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 23.6 V, Io/Isc = 88.2 mA, Po/Po = 519 mW at terminals 13-14, 15-16, 9-10, 11-12.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the PSD1001 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Uo / Voc = 23.6 V		≤	Ui / Vmax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12				
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12				
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12				
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Io / Isc = 352.8 mA		≤	Ii / Imax
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Io / Isc = 264.6 mA			
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Io / Isc = 176.4 mA			
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Io / Isc = 88.2 mA			
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Po / Po = 2073 mW		≤	Pi / Pi
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Po / Po = 1556 mW			
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Po / Po = 1038 mW			
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Po / Po = 519 mW			
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Co / Ca = 970 nF Co / Ca = 3.5 µF Co / Ca = 4.95 µF Co / Ca = 970 nF	IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Co / Ca = 130 nF Co / Ca = 970 nF Co / Ca = 3.5 µF Co / Ca = 4.95 µF Co / Ca = 970 nF	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12				

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo / La = 1.1 mH Lo / La = 2.2 mH Lo / La = 3.74 mH Lo / La = 1.1 mH	IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo / La = 2 mH Lo / La = 4 mH Lo / La = 6.64 mH Lo / La = 2 mH	IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo / La = 1.1 mH Lo / La = 4.5 mH Lo / La = 9.1 mH Lo / La = 14.9 mH Lo / La = 4.5 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo / La = 4.5 mH Lo / La = 18.2 mH Lo / La = 36.5 mH Lo / La = 59.9 mH Lo / La = 18.2 mH	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo/Ro = 68.6 µH/Ω Lo/Ro = 137.2 µH/Ω Lo/Ro = 225 µH/Ω Lo/Ro = 68.6 µH/Ω	IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo/Ro = 91.4 µH/Ω Lo/Ro = 182.9 µH/Ω Lo/Ro = 300 µH/Ω Lo/Ro = 91.4 µH/Ω	IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo/Ro = 34.3 µH/Ω Lo/Ro = 137.2 µH/Ω Lo/Ro = 274.4 µH/Ω Lo/Ro = 450.2 µH/Ω Lo/Ro = 137.2 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		
Ch1, Ch2, Ch3, Ch4	13-14, 15-16, 9-10, 11-12	Lo/Ro = 68.6 µH/Ω Lo/Ro = 274.4 µH/Ω Lo/Ro = 548.9 µH/Ω Lo/Ro = 900.5 µH/Ω Lo/Ro = 274.4 µH/Ω	IIC (A, B) IIB (C) IIA (D) I IIIC (E, F, G)		

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB and 600 nF for Group IIC. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

PSD1001 is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIC, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

PSD1001 must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

PSD1001 is a power supply for field devices housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.
PSD1001 unit can be mounted with any orientation over the entire ambient temperature range.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of PSD1001 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, PSD1001 unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0023**, datasheet and certifications please refer to our website www.gmintsrl.com*

PSD1001C

SAFETY DESCRIPTION

ATEX: II (1)G [Ex ia Ga] IIB, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex nA IIC T4 Gc
IECEx: [Ex ia Ga] IIB, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex nA IIC T4 Gc, associated apparatus and non-sparking electrical equipment.
Uo/Voc = 23.6 V, Io/Isc = 352.8 mA, Po/Po = 1674 mW at terminals 13/15-14/16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN50303.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-15.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-15.

PARAMETERS TABLE

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the PSD1001C series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters indicated in the table below:

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13/15-14/16	Uo / Voc = 23.6 V		≤	Ui / Vmax
Ch1	13/15-14/16	Io / Isc = 352.8 mA		≤	Ii / Imax
Ch1	13/15-14/16	Po / Po = 2073 mW		≤	Pi / Pi
Ch1	13/15-14/16	Co / Ca = 970 nF Co / Ca = 3.5 µF Co / Ca = 4.95 µF Co / Ca = 970 nF	IIB (C) IIA (D) I IIIC (E, F, G)	≥	Ci / Ci device + C cable

Terminals		Associated Apparatus Parameters		must be	Haz. Area/Haz. Locations Device Parameters
Ch1	13/15-14/16	Lo / La = 1.1 mH Lo / La = 2.2 mH Lo / La = 3.74 mH Lo / La = 1.1 mH	IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li / Li device + L cable
Ch1	13/15-14/16	Lo/Ro = 68.6 µH/Ω Lo/Ro = 137.2 µH/Ω Lo/Ro = 225 µH/Ω Lo/Ro = 68.6 µH/Ω	IIB (C) IIA (D) I IIIC (E, F, G)	≥	Li/Ri device and L cable/R cable

For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded (50% of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50% of Co and Li device + L cable ≤ 50% of Lo). The reduced capacitance of the external circuit (including cable) shall not be greater than 1 µF for Groups I, IIA, IIB. If the cable parameters are unknown, the following value may be used: Capacitance 200pF per meter (60pF per foot), Inductance 1µH per meter (0.20µH per foot).

WARNING

PSD1001C is isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN-Rail located in Safe Area or Zone 2, Group IIB, Temperature T4 Hazardous Area (according to EN/IEC60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.

Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.

PSD1001C must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.

De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area or unless area is known to be nonhazardous.

Warning: substitution of components may impair Intrinsic Safety and suitability for Zone 2.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.

Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative.
Any unauthorized modification must be avoided.

INSTALLATION

PSD1001C is a power supply for field devices housed in a plastic enclosure suitable for installation on T35 DIN-Rail according to EN50022.

PSD1001C unit can be mounted with any orientation over the entire ambient temperature range.

Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 installations check the area to be nonhazardous before servicing)**.

The wiring cables have to be proportionate in base to the current and the length of the cable.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)), make sure that conductors are well isolated from each other and do not produce any unintentional connection.

The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.

Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts. If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.

Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of PSD1001C must be cleaned only with a damp or antistatic cloth.

Any penetration of cleaning liquid must be avoided to prevent damage to the unit.
Any unauthorized card modification must be avoided.
According to EN61010, PSD1001C unit must be connected to SELV or SELV-E supplies.

*For the complete instruction manual **ISM0065**, datasheet and certifications please refer to our website www.gmintsrl.com*

INTERNATIONAL
TECHNOLOGY FOR SAFETY

EC Declaration of Conformity

G.M. International S.r.l.

declares that here below listed Models:

D1010, D1010-xxx; D1012, D1012-xxx; D1014, D1014-xxx; D1020, D1020-xxx; D1021, D1021-xxx; D1022, D1022-xxx; D1030, D1030-xxx; D1031, D1031-xxx; D1032, D1032-xxx; D1033, D1033-xxx; D1034, D1034-xxx; D1035, D1035-xxx; D1040, D1040-xxx; D1041, D1041-xxx; D1042, D1042-xxx; D1043, D1043-xxx; D1044, D1044-xxx; D1045, D1045-xxx; D1046, D1046-xxx; D1052, D1052-xxx; D1053, D1053-xxx; D1060, D1060-xxx; D1062, D1062-xxx; D1064, D1064-xxx; D1072, D1072-xxx; D1073, D1073-xxx; D1080, D1080-xxx; D1081, D1081-xxx; D1130, D1130-xxx; D1180, D1180-xxx; PSD1001, PSD1001-xxx; PSD1001C, PSD1001C-xxx;

are in accordance with the following European Directives:

Equipment intended for use in potentially explosive atmospheres (ATEX)	94/9/EC (until April 19, 2016) 2014/34/EU (since April 20, 2016)
Electromagnetic Compatibility (EMC)	2004/108/EC (until April 19, 2016) 2014/30/EU (since April 20, 2016)
Low Voltage Directive (LVD)	2006/95/EC (until April 19, 2016) 2014/35/EU (since April 20, 2016)
Restriction of the use of certain hazardous substances (RoHS)	2011/65/EU

have been designed and manufactured according to the following standards:

EN 60079-0:2012	Explosive atmospheres - Part 0: Equipment - General requirements
EN 60079-11:2012	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
EN 60079-26:2007	Electrical apparatus for explosive gas atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
EN 50303:2000	Group I, Category M1 equipment intended to remain functional in atmospheres endangered by firedamp and/or coal dust
EN 61000-6-4:2007+A1:2011	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
EN 61000-6-2:2005+AC:2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements

are covered by:

DMT 01 ATEX E 042 X	EC-Type Examination Certificate
DNV 06 ATEX 0178 Q	Production Quality Assessment

are suitable for connection to equipment in atmospheres with Gas and are marked:	**II (1)G [Ex ia Ga] IIC**
are suitable for connection to equipment in atmospheres with Dust and are marked:	**II (1)D [Ex ia Da] IIIC**
are suitable for connection to equipment in Mines and are marked:	**I (M1) [Ex ia Ma] I**

This Declaration does not amend, supersede or, in any way, exclude the compliance to any applicable International and/or National Regulatory Requirement

Villasanta, January 25, 2016.

Glisente Landrini
Managing Director

G.M. International S.r.l.
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DTS0249-9

INTERNATIONAL
TECHNOLOGY FOR SAFETY

EC Declaration of Conformity

G.M. International S.r.l.

declares that here below listed Models:

D1054, D1054-xxx; D1061, D1061-xxx; D1063, D1063-xxx

are in accordance with the following European Directives:

Equipment intended for use in potentially explosive atmospheres (ATEX)	94/9/EC (until April 19, 2016) 2014/34/EU (since April 20, 2016)
Electromagnetic Compatibility (EMC)	2004/108/EC (until April 19, 2016) 2014/30/EU (since April 20, 2016)
Low Voltage Directive (LVD)	2006/95/EC (until April 19, 2016) 2014/35/EU (since April 20, 2016)
Restriction of the use of certain hazardous substances (RoHS)	2011/65/EU

have been designed and manufactured according to the following standards:

EN 60079-0:2012	Explosive atmospheres - Part 0: Equipment - General requirements
EN 60079-11:2012	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
EN 60079-26:2007	Electrical apparatus for explosive gas atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
EN 50303:2000	Group I, Category M1 equipment intended to remain functional in atmospheres endangered by firedamp and/or coal dust
EN 61000-6-4:2007+A1:2011	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
EN 61000-6-2:2005+AC:2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements

are covered by:

DNV 04 ATEX 0199	EC-Type Examination Certificate
DNV 06 ATEX 0178 Q	Production Quality Assessment

are suitable for connection to equipment in atmospheres with Gas and are marked:	**II (1)G [Ex ia Ga] IIC**
are suitable for connection to equipment in atmospheres with Dust and are marked:	**II (1)D [Ex ia Da] IIIC**
are suitable for connection to equipment in Mines and are marked:	**I (M1) [Ex ia Ma] I**

This Declaration does not amend, supersede or, in any way, exclude the compliance to any applicable International and/or National Regulatory Requirement

Villasanta, January 25, 2016.

Glisente Landrini
Managing Director

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DTS0250-8

INTERNATIONAL
TECHNOLOGY FOR SAFETY

EC Declaration of Conformity

G.M. International S.r.l.

declares that here below listed Models:

D1010, D1010-xxx; D1012, D1012-xxx; D1014, D1014-xxx; D1020, D1020-xxx; D1022, D1022-xxx; D1031, D1031-xxx; D1033, D1033-xxx; D1034, D1034-xxx; D1035, D1035-xxx; D1040, D1040-xxx; D1041, D1041-xxx; D1042, D1042-xxx; D1043, D1043-xxx; D1045, D1045-xxx; D1046, D1046-xxx; D1052, D1052-xxx; D1060, D1060-xxx; D1061, D1061-xxx; D1062, D1062-xxx; D1063, D1063-xxx; D1064, D1064-xxx; D1072, D1072-xxx; D1081, D1081-xxx; PSD1001, PSD1001-xxx; PSD1001C, PSD1001C-xxx (1)

D1021, D1021-xxx; D1030, D1030-xxx; D1032, D1032-xxx; D1044, D1044-xxx; D1053, D1053-xxx; D1054, D1054-xxx; D1073, D1073-xxx; D1080, D1080-xxx; D1092, D1092-xxx; D1093, D1093-xxx; D1130, D1130-xxx; D1180, D1180-xxx (2)

are in accordance with the following European Directives:

Equipment intended for use in potentially explosive atmospheres (ATEX)	94/9/EC (until April 19, 2016) 2014/34/EU (since April 20, 2016)
Electromagnetic Compatibility (EMC)	2004/108/EC (until April 19, 2016) 2014/30/EU (since April 20, 2016)
Low Voltage Directive (LVD)	2006/95/EC (until April 19, 2016) 2014/35/EU (since April 20, 2016)
Restriction of the use of certain hazardous substances (RoHS)	2011/65/EU

have been designed and manufactured according to the following standards:

EN 60079-0:2012+A11:2013	Explosive atmospheres - Part 0: Equipment - General requirements
EN 60079-15:2010	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
EN 61000-6-4:2007+A1:2011	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
EN 61000-6-2:2005+AC:2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements

are covered by:

IMQ 09 ATEX 013 X	Type Examination Certificate
DNV 06 ATEX 0178 Q	Production Quality Assessment

are suitable for installation/connection to equipment in atmospheres with Gas and are marked:

II 3G Ex nA IIC T4 Gc
for models listed in (1)

II 3G Ex nAC IIC T4 Gc
for models listed in (2)

This Declaration does not amend, supersede or, in any way, exclude the compliance to any applicable International and/or National Regulatory Requirement

Villasanta, January 25, 2016.

Glisente Landrini
Managing Director

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DTS0251-12

INTERNATIONAL
TECHNOLOGY FOR SAFETY

EC Declaration of Conformity

G.M. International S.r.l.

declares that here below listed Models:

D1048, D1048-xxx; D1049, D1049-xxx; D1061-077

are in accordance with the following European Directives:

Equipment intended for use in potentially explosive atmospheres (ATEX)	94/9/EC (until April 19, 2016) 2014/34/EU (since April 20, 2016)
Electromagnetic Compatibility (EMC)	2004/108/EC (until April 19, 2016) 2014/30/EU (since April 20, 2016)
Low Voltage Directive (LVD)	2006/95/EC (until April 19, 2016) 2014/35/EU (since April 20, 2016)
Restriction of the use of certain hazardous substances (RoHS)	2011/65/EU

have been designed and manufactured according to the following standards:

EN 60079-0:2012	Explosive atmospheres - Part 0: Equipment - General requirements
EN 60079-11:2012	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
EN 60079-15:2010	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
EN 60079-26:2007	Electrical apparatus for explosive gas atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
EN 50303:2000	Group I, Category M1 equipment intended to remain functional in atmospheres endangered by firedamp and/or coal dust
EN 61000-6-4:2007+A1:2011	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
EN 61000-6-2:2005+AC:2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements

are covered by:

DMT 01 ATEX E 042 X	EC-Type Examination Certificate
DNV 06 ATEX 0178 Q	Production Quality Assessment

are suitable for installation/connection to equipment in atmospheres with Gas and are marked: **II 3(1)G Ex nA [ia Ga] IIC T4 Gc**

are suitable for connection to equipment in atmospheres with Dust and are marked: **II (1)D [Ex ia Da] IIIC**

are suitable for connection to equipment in Mines and are marked: **I (M1) [Ex ia Ma] I**

This Declaration does not amend, supersede or, in any way, exclude the compliance to any applicable International and/or National Regulatory Requirement

Villasanta, January 25, 2016.

Glisente Landrini
Managing Director

G.M. International S.r.l.
Via G. Mameli 53/55, 20852 Villasanta - MB - ITALY - Tel: +39 039 2325038 - Fax: +39 039 2325107
E-mail: info@gmintsrl.com - Web site: http://www.gmintsrl.com/

DTS0476-3

INTERNATIONAL
TECHNOLOGY FOR SAFETY

EC Declaration of Conformity

G.M. International S.r.l.

declares that here below listed Models:

PSD1000

is in accordance with the following European Directives:

Equipment intended for use in potentially explosive atmospheres (ATEX)	94/9/EC (until April 19, 2016) 2014/34/EU (since April 20, 2016)
Electromagnetic Compatibility (EMC)	2004/108/EC (until April 19, 2016) 2014/30/EU (since April 20, 2016)
Low Voltage Directive (LVD)	2006/95/EC (until April 19, 2016) 2014/35/EU (since April 20, 2016)
Restriction of the use of certain hazardous substances (RoHS)	2011/65/EU

have been designed and manufactured according to the following standards:

EN 60079-0:2012+A11:2013	Explosive atmospheres - Part 0: Equipment - General requirements
EN 60079-15:2010	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
EN 61000-6-4:2007+A1:2011	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
EN 61000-6-2:2005+AC:2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements

are covered by:

DNV 06 ATEX 0178 Q	Production Quality Assessment

are suitable for installation in atmospheres with Gas and are marked: **II 3G Ex nA IIC T4 Gc**

This Declaration does not amend, supersede or, in any way, exclude the compliance to any applicable International and/or National Regulatory Requirement

Villasanta, January 25, 2016.

Glisente Landrini
Managing Director

G.M. International S.r.l.
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DTS0514-1

Warranty

Subject to the conditions set out below, G.M. International warrants that the Instruments supplied will be free from material defects and will correspond to G.M. International's published specifications at the time of the shipment from the factory.

The above warranty is given by G.M. International subject to the following conditions:

1. G.M. International shall be under no liability in respect of any defect in the Instruments arising from any drawing, design or specification supplied by its client;
2. G.M. International shall be under no liability in respect of any defect in the Instruments arising from fair wear and tear, willful damage, negligence, abnormal working conditions, failure to follow the G.M. International's instructions (whether oral or in writing), misuse or alteration or repair of the Instruments without G.M. International's prior written approval;
3. G.M. International shall be under no liability under the above warranty (or any other warranty, condition or guarantee) if the price for the Instruments has not been paid by the due date for payment in accordance with the agreed terms;
4. The above warranty does not extend to parts, materials or equipment not manufactured by G.M. International, in respect of which the Client shall only be entitled to the benefit of any such warranty or guarantee as is given by the manufacturer to G.M. International;
5. G.M. International shall be under no liability in respect of any repair made by unauthorized personnel because it may completely invalidate the Safety Characteristics of the instruments;

All terms, conditions and warranties (whether implied or made expressly) by G.M. International (other than those express warranties set out in the current edition of the G.M. International's specification) relating to the quality and/or fitness for purpose of the Instruments or any of the Instruments are excluded.
The client shall satisfy itself that the Instruments are suitable for any product or application for which they are to be used before they are so used.

Any claim by the Client which is based on any defect in quality or condition of the Instruments or their failure to correspond with specification shall (whether or not delivery is refused by the Client) be notified to G.M. International within 30 days from the date of delivery or (where the defect or failure was not apparent on reasonable inspection) within a reasonable time after discovery of the defect of failure. If delivery is not refused, and the Client does not notify G.M. International accordingly, the Client shall not be entitled to reject the Instruments and G.M. International shall have no liability for such defect or failure and the Client shall be bound to pay the price as if the Instruments had been delivered in accordance with the order.

Where any claim in respect of any of the Instruments which is based on any defect in the quality or condition of the Instruments or their failure to meet specification is notified to G.M. International within 5 years from date of delivery and in accordance with these conditions, G.M. International shall be entitled to replace the Instruments (or the part in question) free of charge or at G.M. International 's sole discretion, refund to the Client the price of the Instruments (or a proportionate part of the price) but G.M. International shall have no further liability to the Client. Replacement, or repair, is at no charge if the instrument is sent back to G.M. International's factory, cost for transport prepaid.

The quantity of the Instruments stated on G.M. International's advice note or other notification of dispatch shall be final unless the Client has given notice of any discrepancy in quantity within 10 days after receipt of the goods and has thereafter given to G.M. International a reasonable opportunity to re-count the Instruments prior to their having been used sold or processed.

Except in respect of death or personal injury caused by G.M. International 's negligence, G.M. International shall not be liable to the Client by reason of any representation or any implied warranty, condition or other term, or under the express terms of the contract for the consequential loss or damage (whether for loss of profit or otherwise), costs expenses or other claims for consequential compensation whatsoever (and whether caused by the negligence of G.M. International, its employees or agents or otherwise) which arise out of or in connection with the supply of the Instruments or their use or resale by G.M. International.

If requested, an estimate of repair charges will be supplied which are not covered under the terms of this certificate.

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