

Characteristics:

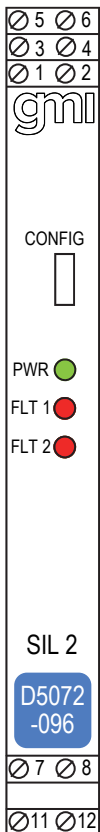
General Description:

The single and dual channel Isolating Repeater D5072S-096 and D5072D-096 accepts a low level dc signal from millivolt or thermocouple sensor, located in Hazardous Area, and repeats, with isolation, the signal to Safe Area, suitable for applications requiring SIL 2 level (according to IEC 61511) in safety related systems for high risk industries. For D5072D-096 module: duplicator function provides two independent outputs from one single input. Mounting on standard DIN-Rail, with or without Power Bus, in Safe Area or in Zone 2.

Fault Detection:

D5072-096 module is able to detect the breakage of the sensor lines (Burnout), as well as internal unrecoverable module errors. This situation is signaled via dedicated red LED on front panel, open collector transistor on Fault bus and lowscale (-10 mV) / highsacle (+100 mV) forcing of output.

Front Panel and Features:



- D5072-096 SIL 2 according to IEC61511.
- Input from Zone 0 (Zone 20), installation in Zone 2.
- mV or thermocouple Input Signal.
- Output duplication possible for D5072D-096.
- High Accuracy, μ P controlled A/D converter.
- Three port isolation, Input/Output/Supply.
- EMC Compatibility to EN61000-6-2, EN61000-6-4, EN61326-1, EN61326-3-1 for safety system.
- ATEX, IECEx, TÜV Certifications (pending).
- High Density, two channels per unit.
- Simplified installation using standard DIN-Rail and plug-in terminal blocks, with or without Power Bus.
- 250 Vrms (U_m) max. voltage allowed to the instruments associated with the barrier.
- Data logging and monitoring via software.

Ordering Information:

Model:	D5072-096	Power Bus and DIN-Rail accessories: Connector JDFT049 Cover and fix MCHP196 Terminal block male MOR017 Terminal block female MOR022
1 channel	S	
2 channels	D	

Operating parameters are programmable from PC by the GM Pocket Portable Adapter PPC5092 via USB serial line and SWC5090 Configurator software.

Technical Data:

Supply: 24 Vdc nom (18 to 30 Vdc) reverse polarity protected, ripple within voltage limits ≤ 5 Vpp, 2 A time lag fuse internally protected.
Current consumption @ 24 V: 35 mA (D5072D-096), 30 mA (D5072S-096).
Power dissipation: 0.85 W for 2 channels D5072D-096, 0.6 W for 1 channel D5072S-096 with 24 V supply voltage.
Isolation (Test Voltage): I.S. In/Out 2.5 KV; I.S. In/Supply 2.5 KV; I.S. In/I.S. In 500 V; Out/Supply 500 V; Out/Out 500 V.
Input: millivolt or any type of thermocouple within Input Range.
Integration time: 75 ms (fast), 375 ms (slow), user selectable.
Resolution: 1 μ V.
Input range: -10 to +100 mV.
Thermocouple burnout current: ≤ 50 μ A.
Fault: Output reflects burnout/internal fault condition via lowsacle (-10 mV) / highsacle (+100 mV) value forcing. Fault condition is also signaled via BUS and red LED on front panel.
Output: millivolt.
Transfer characteristic: linear.
Response time: ≤ 20 ms (10 to 90 % step).
Output range: -10 to +100 mV.
Performance: Ref. Conditions 24 V supply, 23 ± 1 °C ambient temperature, slow integration mode.
Input: Calibration and linearity accuracy: ≤ 10 μ V.
Temperature influence: ≤ 2 μ V/°C, typical.
Output: Calibration and linearity accuracy: ≤ 10 μ V.
Temperature influence: ≤ 3 μ V/°C, typical.

Compatibility:

 CE mark compliant, conforms to Directive: 2014/34/EU ATEX, 2014/30/EU EMC, 2014/35/EU LVD, 2011/65/EU RoHS.

Environmental conditions:

Operating: temperature limits - 40 to + 70 °C, relative humidity 95 %, up to 55 °C.
Storage: temperature limits - 45 to + 80 °C.

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.
D5072S-096: $U_o/V_{oc} = 7.2$ V, $I_o/I_{sc} = 23$ mA, $P_o/P_o = 40$ mW, $U_i/V_{max} = 12.8$ V, $C_i = 0$ nF, $L_i = 0$ nH at terminals 7-8.
D5072D-096: $U_o/V_{oc} = 7.2$ V, $I_o/I_{sc} = 16$ mA, $P_o/P_o = 27$ mW, $U_i/V_{max} = 12.8$ V, $C_i = 0$ nF, $L_i = 0$ nH at terminals 7-8, 11-12.
 $U_m = 250$ Vrms, -40 °C $\leq T_a \leq 70$ °C.

Approvals:

ATEX conforms to EN60079-0, EN60079-11, EN60079-15 (pending).
IECEx conforms to IEC60079-0, IEC60079-11, IEC60079-15 (pending).
SIL 2 conforms to IEC61511 (pending).

Mounting: T35 DIN-Rail according to EN50022, with or without Power Bus.

Weight: about 135 g D5072D-096, 130 g D5072S-096.

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm².

Location: installation in Safe Area or Zone 2, Group IIC T4.

Protection class: IP 20.

Dimensions: Width 12.5 mm, Depth 123 mm, Height 120 mm.

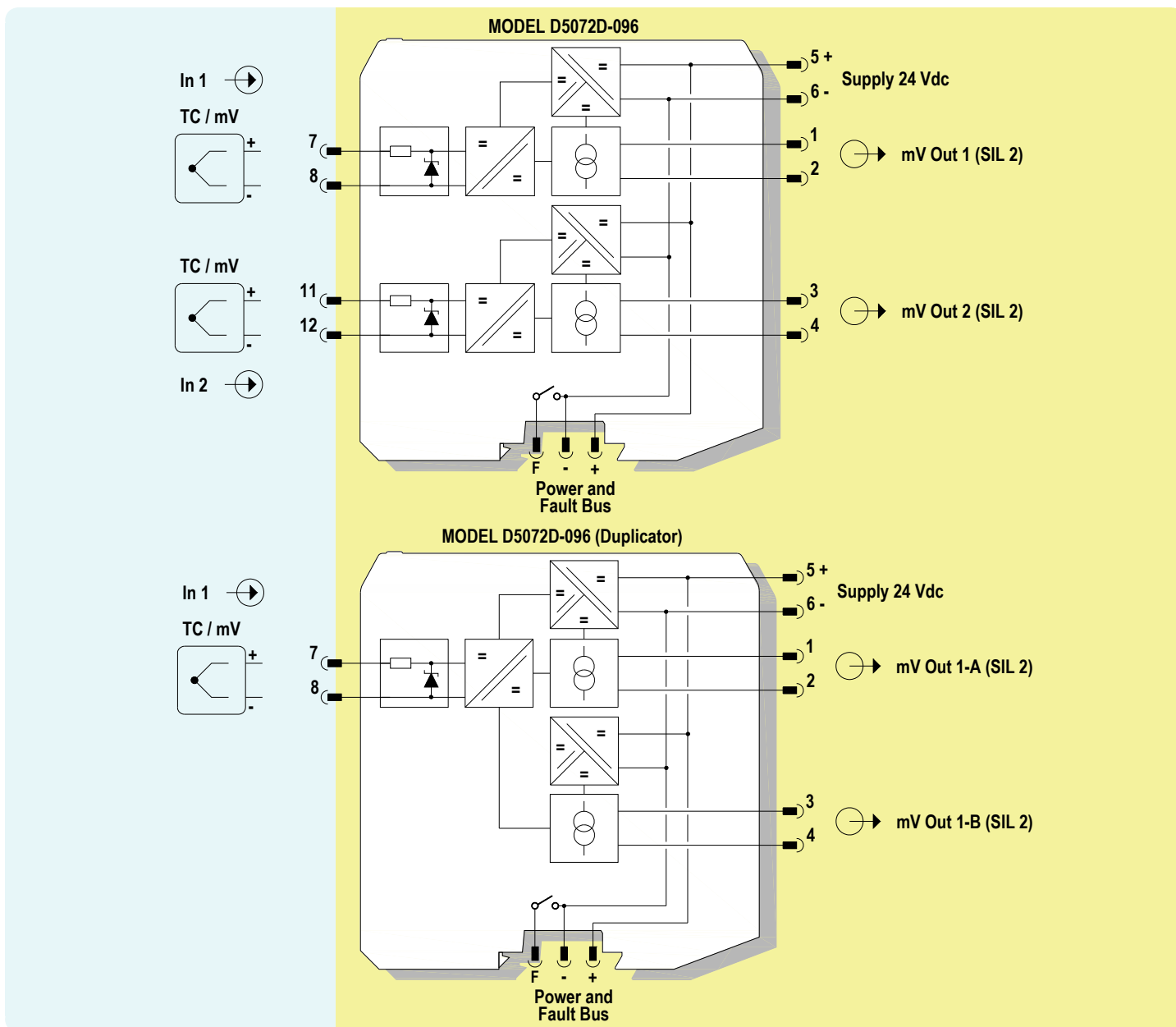
Parameters Table:

Safety Description	Maximum External Parameters			
	Group Cenelec	Co/Ca (μF)	Lo/La (mH)	Lo/Ro (μH/Ω)
D5072S-096: Terminals 7-8 Uo/Voc = 7.2 V Io/Isc = 23 mA Po/Po = 40 mW Ui/Vmax = 12.8 V Ci = 0 nF, Li = 0 nH	IIC	13.5	71	893
	IIB	240	285	3573
	IIA	1000	570	7147
	I	1000	936	11726
	IIIC	240	285	3573
D5072D-096: Terminals 7-8, 11-12 Uo/Voc = 7.2 V Io/Isc = 16 mA Po/Po = 27 mW Ui/Vmax = 12.8 V Ci = 0 nF, Li = 0 nH	IIC	13.5	155	1318
	IIB	240	621	5275
	IIA	1000	1243	10551
	I	1000	2040	17310
	IIIC	240	621	5275

Function Diagram:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC

SAFE AREA, ZONE 2 GROUP IIC T4



Function Diagram:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC

SAFE AREA, ZONE 2 GROUP IIC T4

