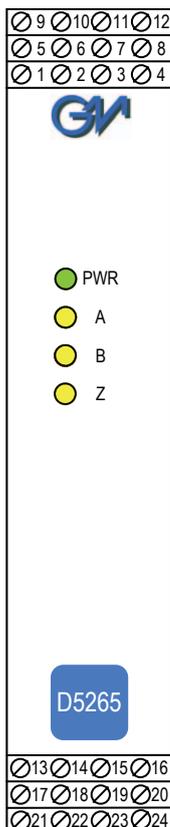


Characteristics:
General Description:

The D5265S module provides both power and signal isolation for an incremental encoder with differential or open collector transistor outputs. Power supply voltage provided to the encoder is 5 Vdc. Module output is provided both with differential or open collector transistor (negative common). Input / output type can be mixed according to encoder and measuring system characteristics. D5265S module provides 3 differential or open collector inputs, 3 differential or open collector transistor outputs with 3 port isolation (input/output/supply). This solution saves the cost and inconvenience of buying separate power and signals barriers. The unit is galvanically isolated from input to output and accepts encoder output from DC to 500 KHz (differential) or DC to 5 KHz (open collector transistor). Input termination impedance is 500 Ω.

Mounting on standard DIN-Rail, with or without Power Bus, or on customized Termination Board, in Safe Area or in Zone 2.

Front Panel and Features:


- Input from Zone 0 (Zone 20), installation in Zone 2.
- Power Supply provided to the encoder.
- Input and Output Differential, DC to 500 KHz or open collector transistor, DC to 5 KHz.
- Input and Output short circuit proof.
- Three port isolation, Input/Output/Supply.
- EMC Compatibility to EN61000-6-2, EN61000-6-4, EN61326-1, EN61326-3-1 for safety system.
- In-field programmability by DIP Switch.
- ATEX, IECEx Certifications.
- Simplified installation using standard DIN-Rail and plug-in terminal blocks, with or without Power Bus, or customized Termination Boards.
- 250 Vrms (Um) max. voltage allowed to the instruments associated with the barrier.

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: 100 mA, with encoder supplied at max current consumption, 500 KHz transmission speed and output terminated with 500 Ω.
Power dissipation: 2.0 W, with encoder supplied at max current consumption, 500 KHz transmission speed and output cable (400 m) terminated with 500 Ω.

Isolation (Test Voltage):

I.S. In/Out 2.5 KV; I.S. In/Supply 2.5 KV; Out/Supply 500 V.

Input: incremental encoder with differential or open collector transistor output.

Encoder Power Supply: 5 Vdc @ 110 mA maximum supply current.

Input Termination Impedance: 500 Ω on differential input.

Transmission speed: DC to 500 KHz differential mode or DC to 5KHz transistor.

Transmission cable length: ≤ 1200 m up to 100 KHz, ≤ 1000 m up to 200 KHz, ≤ 400 m up to 500 KHz.

Transistor Input: 1 KΩ pull-up resistor from 5 Vdc supply.

Transistor Input Switching Levels: ≤ 1.6 V for logic 0, ≥ 2.5 V for logic 1.

Output: differential or open collector transistor (negative common) output.

Output Impedance: 200 Ω series on differential output.

Transmission speed: DC to 500 KHz differential mode or DC to 5KHz open collector.

Transmission cable length: ≤ 1200 m up to 100 KHz, ≤ 1000 m up to 200 KHz, ≤ 400 m up to 500 KHz.

Transistor Output: negative common SPST open-collector transistor.

Open collector rating: 30 mA at 30 Vdc (≤ 0.5 V voltage drop, current limited ≈ 50 mA).

Leakage current: ≤ 50 μA at 30 Vdc.

Compatibility:

CE CE mark compliant, conforms to 94/9/EC Atex Directive and to 2004/108/CE EMC Directive.

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 (M2) [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 = 5.9 V, Io/Isc = 329 mA, Po/Po = 988 mW at terminals 21-22.

Uo/Voc = 5.9 V, Io/Isc = 75 mA, Po/Po = 226 mW at terminals 17-18-19-20-23-24.

Uo/Voc = 5.9 V, Io/Isc = 20 mA, Po/Po = 29 mW at terminals 13-14-15-16.

Um = 250 Vrms, -40 °C \leq Ta ≤ 70 °C.

Approvals:

ATEX conforms to EN60079-0, EN60079-11, EN60079-15, EN60079-26, IECEx conforms to IEC60079-0, IEC60079-11, IEC60079-15, IEC60079-26.

Mounting:

T35 DIN-Rail according to EN50022, with or without Power Bus or on customized Termination Board.

Weight: about 170 g.

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

Location: Safe Area/Non Hazardous Locations or Zone 2, Group IIC T4 installation.

Protection class: IP 20.

Dimensions: Width 22.5 mm, Depth 123 mm, Height 120 mm.

Ordering Information:

Model: D5265S

Power Bus and DIN-Rail accessories:

Connector JDFT050

Cover and fix MCHP196

Terminal block male MOR017

Terminal block female MOR022

Parameters Table:

Safety Description	Maximum External Parameters			
	Group Cenelec	Co/Ca (µF)	Lo/La (mH)	Lo/Ro (µH/Ω)
Terminals 21-22	IIC	42	0.32	36.0
Uo/Voc = 5.9 V	IIB	999	1.31	144.0
Io/Isc = 329 mA	IIA	999	2.63	288.0
Po/Po = 988 mW	I	999	4.32	472.6
	iaD	999	1.31	144.0
Terminals 17-18-19-20-23-24	IIC	42	6.33	157.8
Uo/Voc = 5.9 V	IIB	999	25.33	631.5
Io/Isc = 75 mA	IIA	999	50.66	1263.1
Po/Po = 226 mW	I	999	83.11	2072.3
	iaD	999	25.33	631.5
Terminals 13-14-15-16	IIC	42	92.36	1234.0
Uo/Voc = 5.9 V	IIB	999	369.46	4936.2
Io/Isc = 20 mA	IIA	999	738.92	9872.4
Po/Po = 29 mW	I	999	1212.29	16196.9
	iaD	999	369.46	4936.2

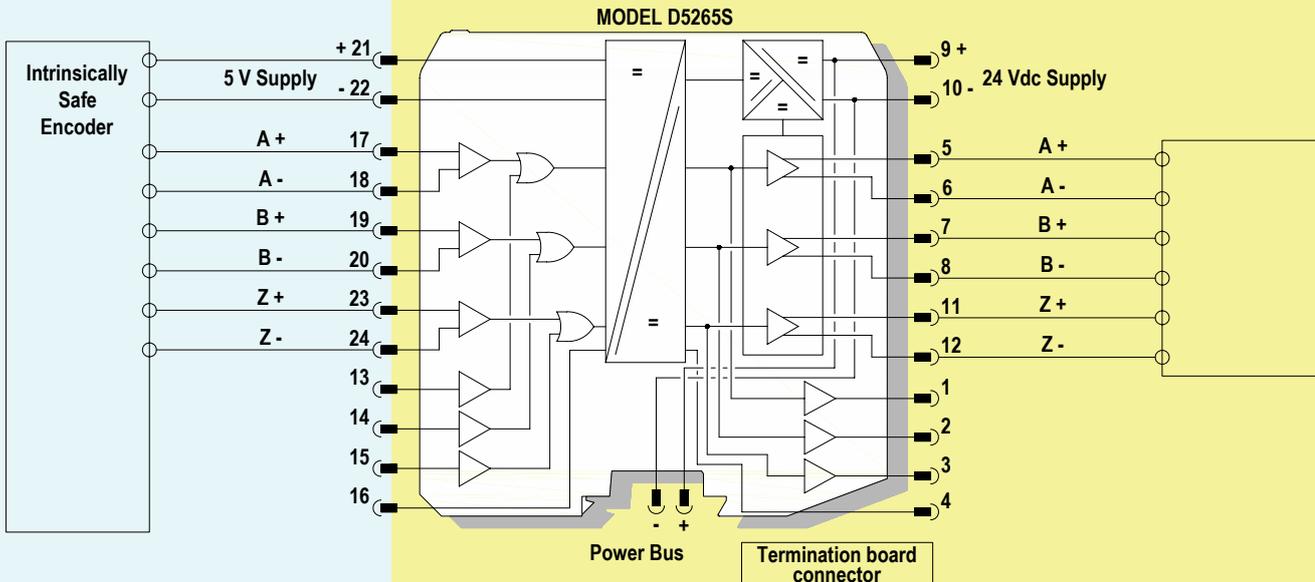
Image:



Function Diagram:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC

SAFE AREA, ZONE 2 GROUP IIC T4

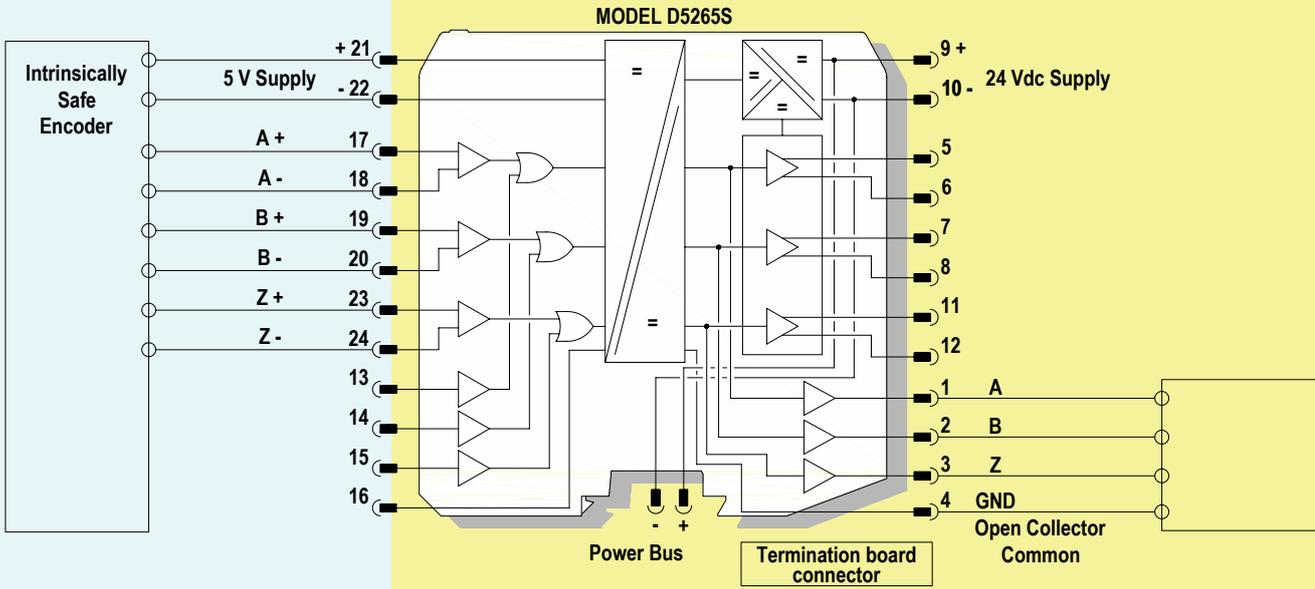


Differential Input / Differential Output

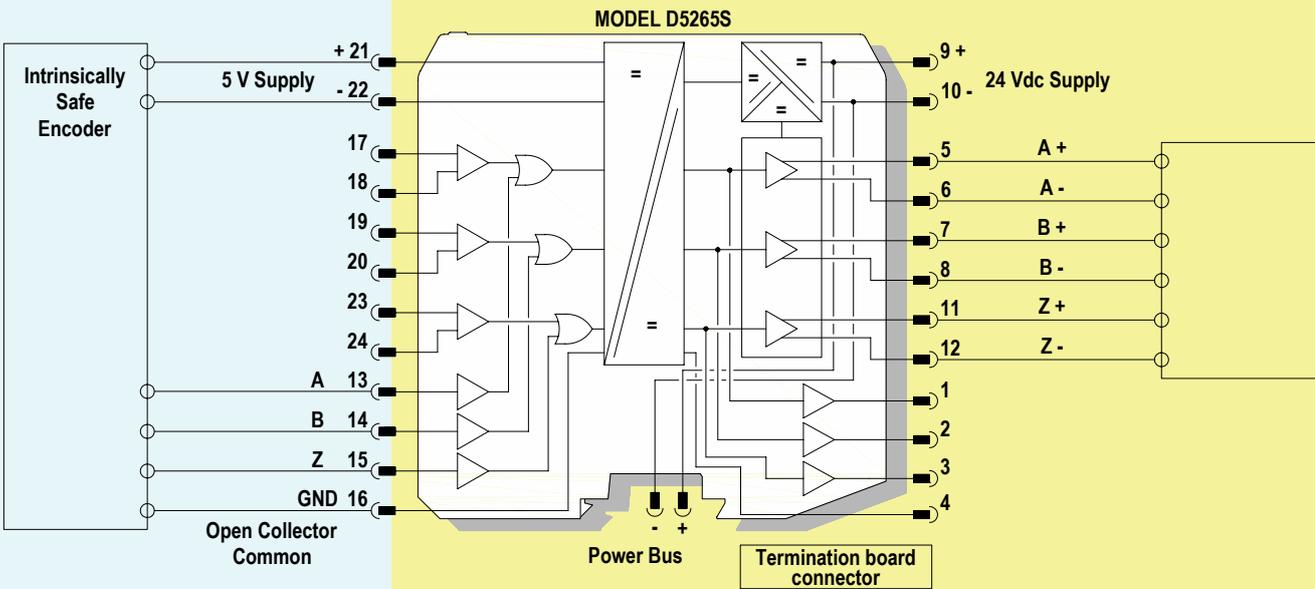
Function Diagram:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC

SAFE AREA, ZONE 2 GROUP IIC T4



Differential Input / Open Collector Transistor Output

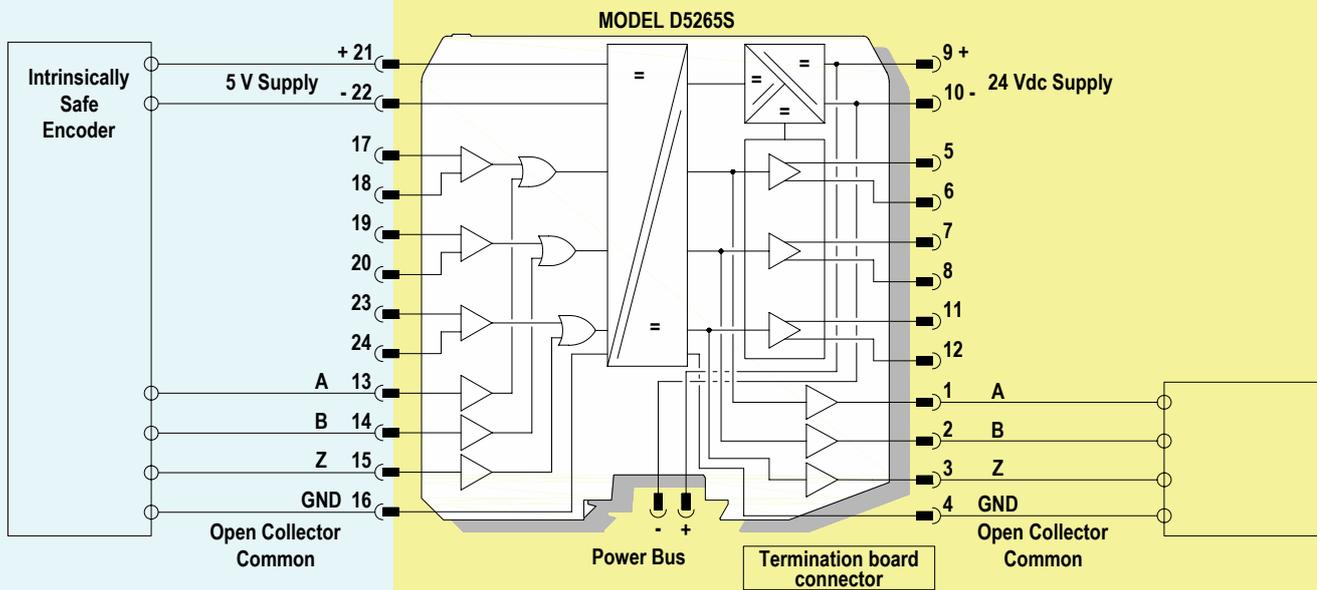


Open Collector Transistor Input / Differential Output

Function Diagram:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC

SAFE AREA, ZONE 2 GROUP IIC T4



Open Collector Transistor Input / Open Collector Transistor Output