

# Intrinsic Safety Barrier

Modbus Smart Transmitter



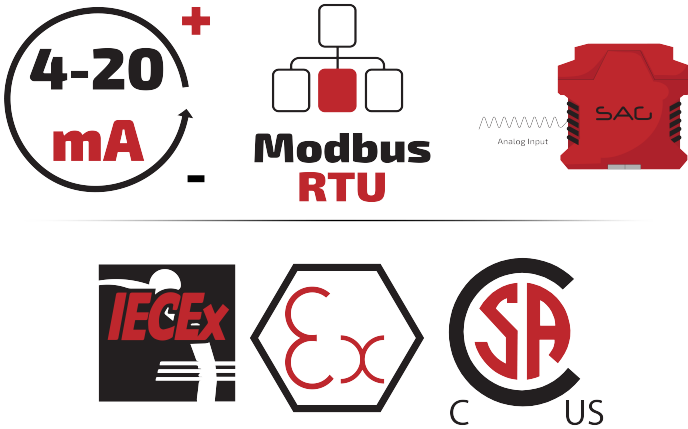
# MD-STC2

Smart Transmitter Intrinsic Safety Barrier  
(Modbus Output)



- Support 2 Channels
- 24 VDC Supply
- Analog Signal Type
- Modbus RTU, RS-485 Interface
- Connection with Screw Terminals
- 2 Wire Smart Transmitters
- Configurable with Modbus Protocol
- 4-20 mA Passive Input

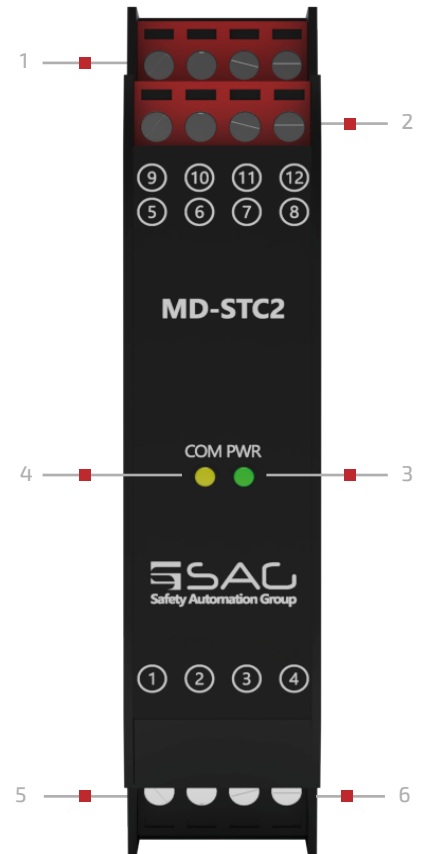
## Product Features



**MD-STC** Used to read 2-wire smart transmitters in hazardous areas, the **MD-STC** is an intrinsically safe barrier, with support for up to 2 channels. Through the use of the MODBUS Protocol, data is collected from a hazardous area with 4 ~ 20 mA analog current signal (Zone 0 or Zone 1). The data is then safely transmitted back to the safe area, with a bit rate up to 115.2 kbps via the RS-485 interface; making it ideal for convenient, remote monitoring from a safe area. Note: Using this protocol, data is only transferred from the hazardous area to the safe area, with no more analog signals reproduced in the safe area.

The input of the **MD-STC** consumes 208 mA current and 5W, with a power dissipation of less than 1W, and a 24 VDC nominal with reversed polarity protected power. The environmental conditions are -20 to +60 °C as an operation, and -25 to +65 °C as storage temperature. The MD-STC has a sturdy 35 mm DIN mounting rail acc.

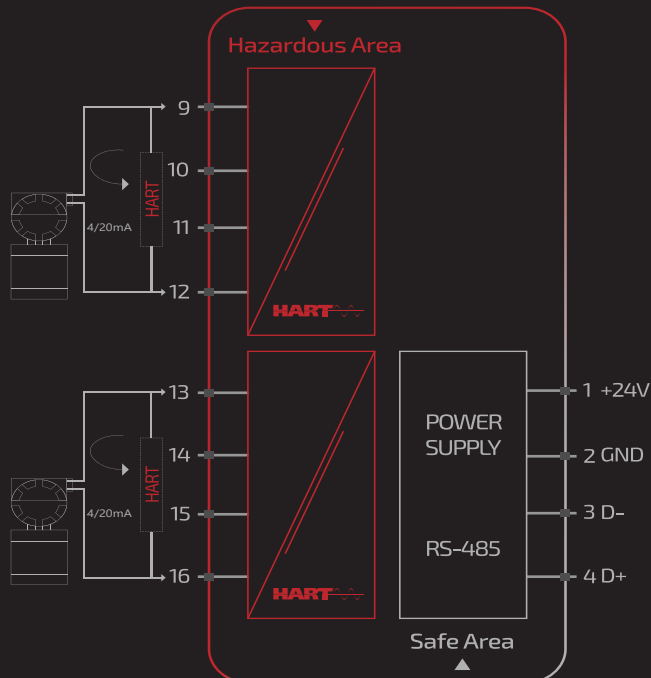
# Front View



1. Analog Input : Channel 2
2. Analog Input : Channel 1
3. Power LED
4. Communication LED
5. Power Supply Terminal
6. RS-485 Interface

# Connection View

## MD-STC2 SMART TRANSMITTER Intrinsic Safety Barrier



### MD-STC2 PIN Configuration

1. +24VDC	5. Channel 1
2. GND	6. Analog Input
3. RS-485 (D-)	7. HART/4-20 mA
4. RS-485 (D+)	8. HART/4-20 mA
	9. Channel 3
	10. Analog Input
	11. HART/4-20 mA
	12. HART/4-20 mA

# Smart Transmitter Barrier

## TECHNICAL DATA

MD-STC2

### GENERAL SPECIFICATION

Signal Type	Analog Input
Number of Channels	2 Channel

### SUPPLY

Rated Voltage	24 VDC Nom (20-30 VDC) Reverse Polarity Protected
Connection	Terminal 1 PIN 1(+24 VDC), Terminal 1 PIN 2 (GND)
Power Dissipation	< 1 W
Current Consumption	Approx. 208mA
Max. Power Consumption	5 W

### INPUT

Input	4...20 mA
Connection	Terminals 3,4
Connection Side	Field Side
Available Voltage	> 16 V at 20 mA

### OUTPUT

Output	Modbus over RS-485
Connection	Terminals 1
Connection Side	Control Side

### GALVANIC ISOLATION

Input / Power Supply	1500 VDC Example. safe electrical isolation by reinforced insulation according to IEC/EN 61010 <sup>-1</sup> Rated insulation voltage 300 Veff test voltage 3 kV, 50 Hz, 1 min.
Output/ Power Supply	Functional Insulation, Rated Insulation Voltage 50 V AC
Output/ Output	Functional Insulation, Rated Insulation Voltage 50 V AC

### TRANSFER CHARACTERISTICS

Deviation	At -20 to +60 °C, 4...20 mA : ≤10 µA incl.
Influence of Ambient Temperature	0.25 µA/K

### DATA CONNECTION

Modbus RTU	RS-485 connection up to 115.2 kbps for Monitor/ Configuration
Connection	Terminal1 PIN 3 (D-), Terminal1 PIN 4 (D+)

# Smart Transmitter Barrier

## TECHNICAL DATA

MD-STC2

### MOUNTING

Mounting On 35 mm DIN Mounting Rail Acc. to EN 60715:2001

### ENVIRONMENTAL CONDITIONS

Operation Temperature Temperature Limits -20 to +60 °C

Storage Temperature Temperature Limits -25 to +65 °C

### APPROVALS

IEC60079-0, IEC60079-11, IEC60079-15

FM & FM-C No.3024643,3029921C, conforms to Class 3600,3610,3611,3810

### LOCATION

Safe Area/Non Hazardous Locations or Zone 2, Group IIC T4, Class I, Division 2, Groups A, B, C, D

Temperature Code T4 and Class I, Zone 2, Group IIC, IIB, IIA T4 installation.

### SAFETY DESCRIPTION

ATEX Ex ic [ia Ga] IIC T4 Gc, Ex ic [ic] IIC T4 Gc, Ex ic [ia IIIC Da] IIC Gc, Ex ic [ic IIIC Dc] IIC Gc

IECEX Ex ic [ia Ga] IIC T4 Gc, Ex ic [ic] IIC T4 Gc, Ex ic [ia IIIC Da] IIC Gc, Ex ic [ic IIIC Dc] IIC Gc

North American Zones Class 1, Zone 2 AEx ic [ia Ga] IIC T4 Gc, Class I, Zone 2 AEx [ic] IIC T4 Gc  
Zone 20 Ex ic [ia IIIC Da] IIC Gc, Zone 2 Ex ic [ic IIIC Dc] IIC Gc

North American Div Class I, Division 2, Groups A, B, C, D T4, Class II, Division 2, Groups F, G

### ASSOCIATED ELECTRICAL APPARATUS

$V_0/V_{oc}$  17.0 V,  $I_0/I_{sc} = 85$  mA,  $P_0/P_o = 1.45$  W

IECEX 24V,  $C_i = 6$  nF,  $L_i = 0$  nH.  $U_m = 30$  V,  $-20$  °C  $\leq T_a \leq 60$  °C.

## ORDERING INFORMATION

### MD-STC N

MD:

Modbus Compatible

STC:

2 Wire Smart Transmitters

N:

Number of Channels

1 : One Channel

2 : Two Channel

### ORDERING INFORMATION

MD-STC1 Modbus Smart Transmitter, 1 Channel

MD-STC2 Modbus Smart Transmitter, 2 Channel



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