Overview

SITRANS MX300 is a HART multiplexer for use with the industrial gateway SITRANS CC240. Used in combination, these devices can read and acquire data from HART networks of up to 64 instruments.

Benefits

- Connect up to 8 HART devices of revisions 5, 6, or 7, in any combination.
- Combine up to 8 SITRANS MX300 devices with one SITRANS CC240, using the backplane connection to conveniently read up to 64 HART devices
- Operate each channel selectively in slave mode (where there is an existing HART master) or in stand-alone mode (where there is no existing HART master), configurable using switches, 250 Ω for connection in series to the field devices or no load for the connection in parallel.
- Galvanically isolated channels allow the device to interface with different networks.
- Supports HART multidrop.
- Small footprint supports retrofitting of existing installations.

Application

When used in combination with SITRANS CC240, SITRANS MX300 can:

- Establish a second data channel for existing HART installations to read out identification, diagnostic and configuration parameters.
- Establish a physical connection to the HART device, ensuring proper handling of the HART communication protocol and avoid communication conflicts with additional HART masters that may be present on the 4 to 20 mA loop.

Technical specifications

SITRANS MX300	
Installation type/mounting (characteristics)	
Mounting type	Rail mounting
Input current	
Current consumption (rated value)	10 mA (24 V)
Current consumption, max.	20 mA
Analog inputs	
Number of analog inputs	8
Permissible input current (destruction limit)	30 mA
Reverse polarity protection	Yes, for power supply, not applicable for HART inputs
Input ranges (rated values)	
0 ... 20 mA • Input resistance (0 ... 20 mA)	Yes 250 Ω, switchable
4 ... 20 mA • Input resistance (4 ... 20 mA)	Yes 250 Ω, switchable
Ambient conditions	
Ambient temperature during operation	-40 ... +50 °C (-40 ... +122 °F)
Horizontal installation	-40 ... +60 °C (-40 ... +140 °F)
Vertical installation	-40 ... +50 °C (-40 ... +122 °F)
Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30
• Operation	5 ... 80 % at 30 °C (86 °F) (no condensation)
• Storage/transport	5 ... 80 % at 25 ... 55 °C (77 ... 131 °F) (no condensation)
Design	
Dimensions (W x H x D)	144 x 90 x 53 mm (5.7 x 3.5 x 2.1 inch)
Weight	100 g (0.2 lb), without connectors
Material • Enclosure	• Plastic enclosure • Resistant to vibrations and shocks • High electromagnetic compatibility, suitable for industrial environments
Degree and class of protection • IP degree of protection • IP degree of protection (at the front)	 IP20 IP20
Cable length	
Shielded, max.	200 m
Electrical isolation	
Between the channels	Yes
Between the channels and backplane bus/RS 485	Yes
Between the channels and load voltage L+	Yes
Isolation tested	1 500 V DC/1 min., type test
EMC[1)]	
Interference immunity against discharge of static electricity	• ± 4 kV contact discharge acc. to IEC 61000-4-2 • ± 8 kV air discharge acc. to IEC 61000-4-2

SITRANS MX300	
Interference immunity against high-frequency electromagnetic fields • Interference immunity against high frequency radiation	 • 10 V/m for 80 ... 1 000 MHz, 80 % AM acc. to IEC 61000-4-3 • 3 V/m for 1.4 ... 2 GHz, 80 % AM acc. to IEC 61000-4-3 • 1 V/m for 2 ... 2.7 GHz, 80 % AM acc. to IEC 61000-4-3 • 10 V for 150 kHz ... 80 MHz, 80 % AM acc. to IEC 61000-4-6
Interference immunity to cable-borne interference • Interference immunity on supply cables	 • ± 2 kV acc. to IEC 61000-4-4, burst • ± 1 kV acc. to IEC 61000-4-5, surge symmetric • ± 2 kV acc. to IEC 61000-4-5, surge asymmetric
• Interference immunity on signal cables > 30 m	± 2 kV acc. to IEC 61000-4-5, surge, length > 30 m
• Interference immunity on signal cables < 30 m	± 2 kV in accordance with IEC 61000-4-4, burst, length > 30 m
Interference immunity against voltage surge	
Asymmetric interference	± 1 kV acc. to IEC 61000-4-5, surge asymmetric
Symmetric interference[2)]	± 1 kV acc. to IEC 61000-4-5, surge asymmetric
Interference immunity to magnetic fields at 50 Hz	100 A/m; to IEC 61000-4-8
Emission of conducted and non-conducted interference	
Interference emission via line/AC current cables	EN 61000-6-4:2007 +A1:2011
Supply voltage	
Isolated power supply	24 V DC (9 ... 35 V) via backplane connector (limit 35 V)
Rated value	24 V DC
Permissible range, lower limit	9 V DC
Permissible range, upper limit	35 V DC
Reverse polarity protection	Yes
Certificates and approvals	
General	• CE • $_{C}UL_{US}$ (in preparation)
EMC	CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005, EN 61000-6-3:2007 +A1:2011, EN 61000-6-1:2007
Communication	• 8 x 4/20 mA HART input • 1 x RS 485 interface via backplane connector

1) EMC standards meet immunity requirements for industrial environments

2) If there are voltage peaks on the power supply lines, use a protective device such as a varistor (MOV) UMOV = Urated x 1.2 (BLITZDUCTOR BVT AVD 24 (918 422) or compatible).

Selection and ordering data

	Article No.
SITRANS MX300 HART multiplexer, 8 channels to connect up to 8 HART devices, 24 V DC supply voltage, rail mounting.	**7MP2200-1AD10-2AA0**