SOMAT XR

MX471B-R

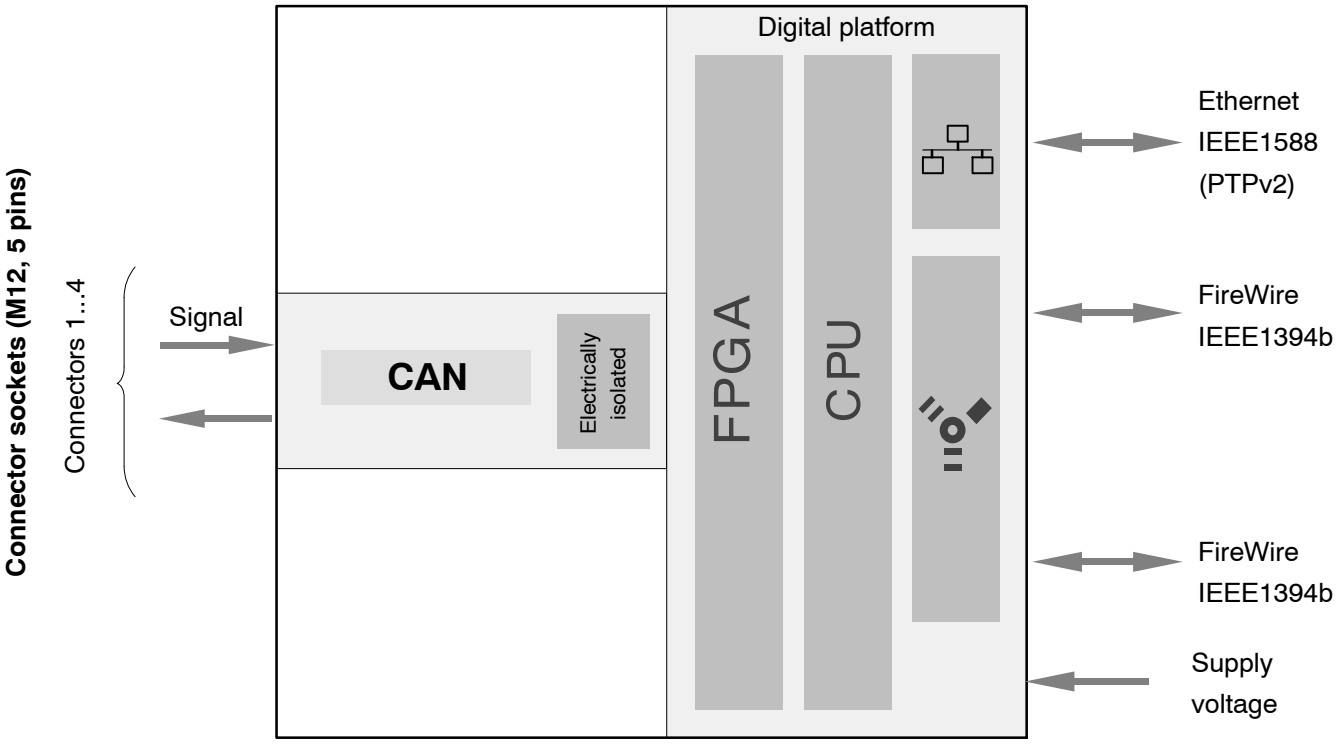
CANbus module

Data sheet

Special features

- **Four individually configurable channels (electrically isolated)**
- **Receive: raw or decoded (*.dbc)**
- **Transmit: sensor signals or gateway**
- **CAN 2.0A/B**
- **CCP / xCP–on–CAN**
- **J1939 (via catman®Easy/AP)**
- **Use in harsh environments (shock, vibration, temperature, dewing, moisture)**

Block diagram



HBM

Specifications MX471B-R

General Specifications		
Number of CAN ports		4, electrically isolated
Supported protocols		CAN 2.0A (11−Bit−Identifier) CAN 2.0B (29−Bit−Identifier (”extended format”) CAN Calibration Protocol (CCP) eXtended Calibration Protocol (xCP−on−CAN) SAE J1939
Bus link		two wire, according to ISO11898−2
Transducer connection		M12, 5 pins
Supply voltage range (DC)	V	10 ... 30 (24 V nominal (rated) voltage)
Supply voltage interruption, max. (at 24 V)	ms	5[1)]
Power consumption	W	< 6
Ethernet (data link)		10Base-T / 100Base-TX
Protocol	–	TCP/IP
Connector	–	ODU MINI-SNAP, 8 pins
Max. cable length to module	m	100
Synchronization options FireWire IEEE1394b Ethernet PTPv2 IEEE1588 Ethernet NTP		 FireWire based synchronization Ethernet based Precision Time Protocol Ethernet based Network Time Protocol
IEEE1394b FireWire (optional supply voltage)		IEEE 1394b (HBM modules only)
Max. current from module to module	A	1.5
Connector		ODU MINI-SNAP, 8 pins
Max. cable length between the nodes	m	5 (optical: 100)
Max. number of modules connected in series (daisy chain)	–	12 (=11 Hops[2)])
Max. number of modules in a IEEE1394b FireWire system (including hubs[3)])	–	24
Max. number of hops	–	14
Nominal (rated) temperature range	°C [°F]	−40... +80 [−40 … +176] dew point resistant
Altitude de-rating	–	–
maximum temperature a 0 m	°C [°F]	+80 [+176]
maximum temperature a 2500 m	°C [°F]	+70 [+158]
maximum temperature a 5000 m	°C [°F]	+55 [+131]
Storage temperature range	°C [°F]	−40 ... +85 [−40 ... +185]
Relative humidity	%	5 ... 100
Protection class		III[4)]
Degree of protection (dust, humidity/water)		IP65/IP67 per EN 60529
EMC requirements		CE conformity test per EN 61326−1
Mechanical test		
Vibration		accord. MIL−STD202G, Method 204D, Test condition C
Acceleration	m/s^2	100
Duration	min	450
Frequency	Hz	5 bis 2,000
Shock		accord. MIL−STD202G, Method 213B, Test condition B
Acceleration	m/s^2	750
Pulse duration	ms	6
Number of impacts	–	18
Operating altidude, max.	m	5,000
Dimensions, horizontal (H x W x D)	mm	80 x 205 x 140
Weight, approx.	g /pound	1,850 / 4.08

1) Uninterruptible Power Supply (UPS)) for prolonged interruption of power, available as an accessory.
2) Hop: Transition from module to module or signal conditioning / distribution via IEEE1394b FireWire (hub, backplane)
3) Hub: IEEE1394b FireWire node or distributor
4) The DC voltage supply must meet the requirements of IEC 60950−1 on a SELV voltage supply.

Specifications MX471B–R (Continued)

CANbus												
Bit rates	kBit/s	1,000	800	666.6	500	400	250	125	100	50	20	10
Permissible cable lengths	m	25	50	80	100	100	250	500	600	1,000	2,500	5,000
Formats		Motorola, Intel										
Bus termination resistor (internal, can be activated via software)	Ω	appr. 120										
Max. Number of Signals per modul (decoding and sending)	1/s	100,000										
Receive decoded signals												
Max. number of input signals per port		128										
CAN signal types for input signal		standard, mode-dependent, mode-signal										
Parameterization		Manual or parametrization (*.dbc)										
Receive raw data stream												
Max. number of input signals		Unlimited – all bus data										
Parameterization		catman®Easy/AP										
CCP / xCP–on–CAN Input												
Supported protocols CCP xCP–on–CAN		 Version 2.1 Version 1.1										
Parameterization		*.dbc File required step using CANape from Vector Informatik (read A2L file, generate dbc file)										
Input SAE J1939												
Parameterization		catman®Easy/AP, integriated signal database										
Signals send per CAN Port												
Signal sources		Sensor signals/measured values (MX inputs), CAN signal inputs (e.g. for implementing a CAN–to–CAN gateway and modifying data types), Real–time signals (e.g. matrix calculation result, PID controller, RMS value, peak values)										
Parameterization		In MX Assistant software, use drag and drop to copy signals to the CAN port and manually parameterize the CAN ID. Then use MX Assistant to create a database (*.dbc file)										
Max. number of meassages (IDs)		128										
Max. number of signals per meassage		several signals per message (ID)										
Data types		free configuration of data types: – floating point (32, 64) – integer / fix point (1...64 bit)										
Max. data rate per CAN measage	1/s	1,200										

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B4305-2.0 en HBM: public