

MA OMS1 IS

2 SSI Interfaces

System Specification INTERBUS BOX

Please keep for further use !

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Note

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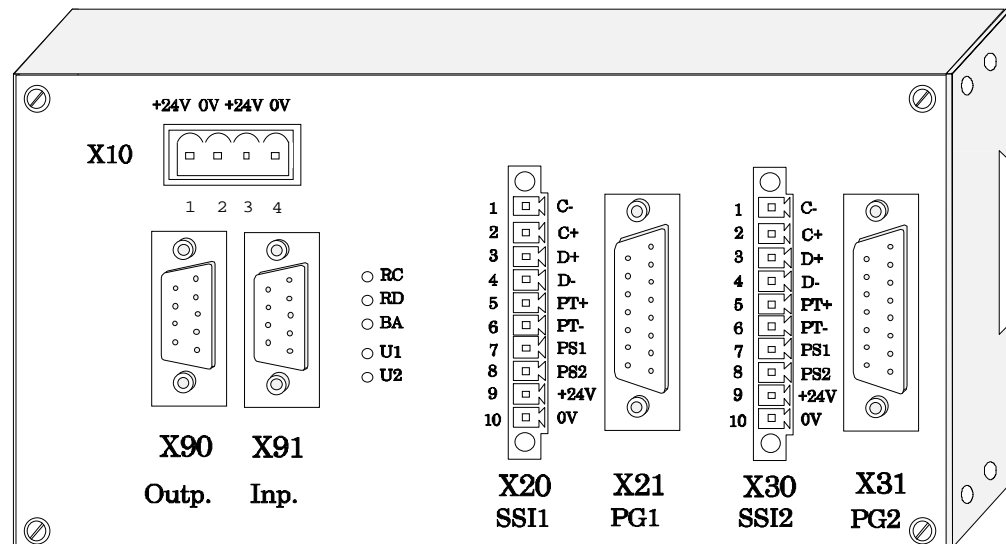
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1 General description

The MA OMS1 IS is an INTERBUS-S module with two SSI interfaces, each with a connection for a programming device (PC adapter). The voltage for the connected SSI encoder and PC adapter (if applicable) is supplied via the 24V voltage supply outputs of the MA OMS1 IS. These outputs are protected by a 400 mA (PTC) multifuse for both the encoder and the PC adapter.



2 Description of functions

The MA OMS1 IS reads out both connected SSI encoders permanently at an SSI frequency of 250 kHz. The last position value is temporarily stored in each case, which means that an INTERBUS-S message always incorporates the last fully transferred SSI data. The MA OMS1 IS does not need to be programmed with the INTERBUS-S, as data can only be read out from the INTERBUS-S.

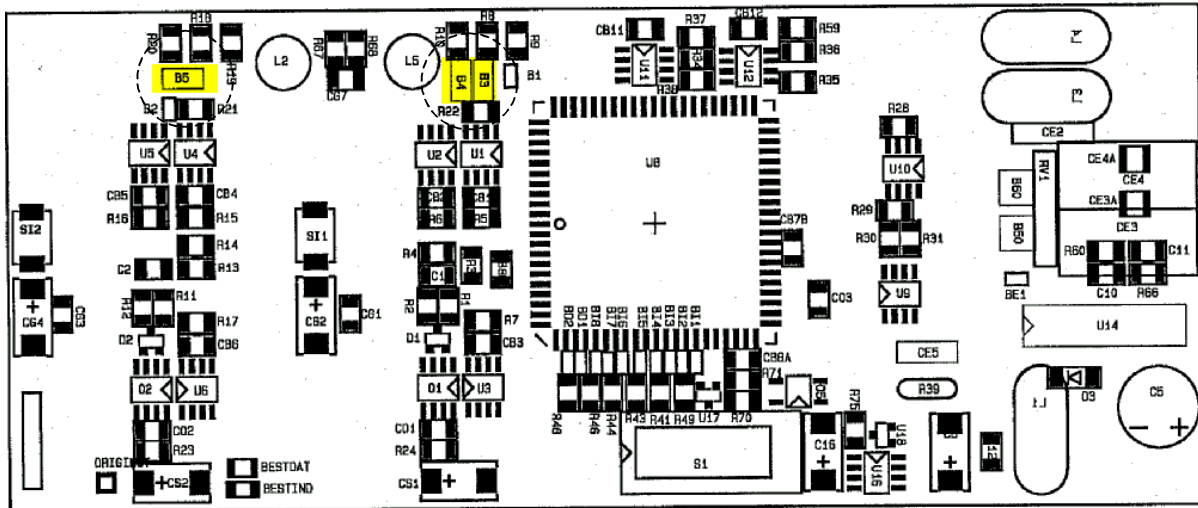
A position value transferred via SSI normally has a data width of 24 bits. The standard version of the MA OMS1 IS transfers these 24 bits to the INTERBUS-S in two words, i.e. in 32 bits. The eight most significant bits always have the status of the most significant bit of the user information. The position value can therefore be read by the INTERBUS-S master in the 32-bit two's complement.

Since the MA OMS1 IS uses two SSI channels, it assigns four word addresses on the INTERBUS-S.

By reversing a jumper in the MA OMS1 IS, the SSI interface can be switched from binary to gray code. The default setting is binary.

3 Configuration of the SSI-Interface

From the software version '24-26A' (from Jan.1999), the SSI transmission frequency was increased by 125MHz to 250 MHz and the data capacity of 24..26 bits is adjustable with jumpers. At the delivery of the device, the transfer format is adjusted binary with 24 data bits (default setting). To change the jumper setting the case must be opened. The jumpers are accessible on the underside of the printed board.



Jumper position

3.1 Jumper setting

	B3	B5	
24 bit	open	open	default
25 bit	closed	open	
26 bit	open	closed	
16 bit	closed	closed	

	B4	
binary	open	default
gray	closed	

4 INTERBUS-S

The INTERBUS-S consists of an electrically isolated two-wire remote bus with 500 Kbit. The transmitting and receiving levels correspond to RS 422. The remote bus input is realised via a 9-pole Dsub plug connector, and the remote bus output via a corresponding socket connector, each with standard INTERBUS-S assignments.

The data protocol is effected for the K2 level of the ENCOM User Group and guarantees an easy link into the field bus INTERBUS-S.

The MA OMS1 IS is detected on the INTERBUS-S via the identification no. 51 (33H).

4.1 Address assignment

Address 1	SSI 1	more significant word
Address 2	SSI 1	less significant word
Address 3	SSI 2	more significant word
Address 4	SSI 2	less significant word

5 Meaning of status LEDs

There are five LEDs visible on the MA OMS1 IS for indicating the system status.

RC	Remotebus Check Monitoring of INTERBUS-S remote bus input The diode lights up when the cable connection is OK and the IB master is active.
RD	Remotebus Disable Monitoring of extended remote bus
BA	Bus Active Signals an INTERBUS-S transfer The LED goes out if the bus remains inactive longer than the set watchdog time (default setting = 640 ms).
U1	Monitoring of system supply voltage The LED lights up if the internal 5V system voltage is OK.
U2	Voltage monitoring of electrically isolated remote bus input The LED lights up if the voltage is OK

6 Connector pin assignment

6.1 Voltage supply X10

Combicon 5.08, 4-pole

Pin		
1	+24V	(input)
2	0V	(input)
3	+24V	(connected internally to pin 1, can be used as output for max. 5 A)
4	0V	(connected internally to pin 2, can be used as output for max. 5 A)

6.2 SSI interfaces X20 / X30

Combicon 3,81, 10-pole

Pin		
1	Clock -	
2	Clock +	
3	Data +	
4	Data -	
5	RS485+ (PT +)	Programming input (through connection to programming device)
6	RS485- (PT -)	Programming input (through connection to programming device)
7	PS1	Preset 1 (not supported)
8	PS2	Preset 2 (not supported)
9	+24V	Output 300 mA
10	0V	Output

6.3 Programming interface X21 / X31

DSUB socket, 15-pole

Pin		
1	RS485- (PT -)	Programming
2	RS485+ (PT +)	
14	+24V	Output
15	0V	Output

The other pins of this connector are not assigned.

6.4 INTERBUS-S remote bus input

X91 DSUB pin, 9-pole

Pin	
1	TPDO1
2	TPDI1
3	GNDI
4,5	NC
6	/TPDO1
7	/TPDI1
8,9	NC

6.5 INTERBUS-S remote bus output

X90 DSUB socket, 9-pole

Pin	
1	TPDO2
2	TPDI2
3	GND
4	NC
5	GND
6	/TPDO2
7	/TPDI2
8	NC
9	/RBST

Note

If the remote bus output is assigned (other INTERBUS S subscribers), pin 5 must be connected to pin 9 in this plug.

7 Technical data

Supply voltage:	24VDC (+- 20%)
Current consumption:	180 mA (without connected encoder)
1 INTERBUS-S interface	2-wire remote bus with RS422, Remote In electrically isolated ID no. 51 (33H)
2 encoder interfaces	SSI, data size 24 .. 26 bits, 250 kHz, switchable to gray or binary transfer
2 programming interfaces	For PC adapter connection
Housing:	Aluminium press-drawn section
Dimensions: (W * H * D)	163 * 78 * 78 (depth with voltage supply plug)
Weight:	Approx. 680 g
Operating temperature:	0°C .. +55°C
Storage temperature:	-20°C ..+70°C

8 Appendix

8.1 Special 15-bit version

In this case, the position value transferred via SSI has a data width of 15 bits. The MA OMS1 IS transfers these 15 bits to the INTERBUS-S in one word, i.e. in 16 bits, whereby the most significant bit always has the status of the most significant bit of the user information. The position value can therefore be read by the INTERBUS-S master in the 16-bit two's complement.

Since the MA OMS1 IS uses two SSI channels, it assigns two word addresses on the INTERBUS-S.

By reversing a jumper in the MA OMS1 IS, the SSI interface can be switched from binary to gray code. The default setting in the 15-bit version is gray.

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