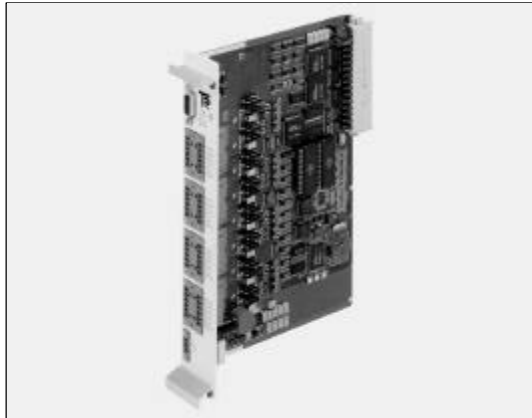
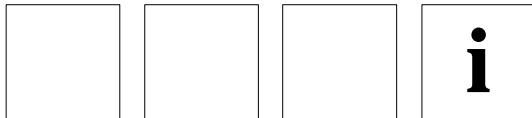


Central-Module CM-10-SSI



- **Distance detect board for SIMATIC-S5**
- **4 or 8 encoder-axis with synchronous-serial data communication**
- **Plug-in in controls of the following series: S5-135U/S5-155U with adaptation capsule also in S5-115U**
- **Read in and programmig the axis parameter via a handling software**

Electrical Data

Encoder-Interface	Standard SSI, 24 Bit
Code	Binary or Gray, without saving or SSI-Binary with checksum
Characteristic Features of the SSI Interface	
Line length	Max 250m at 125 kHz without error-correcting protocol - with checksum evaluation it is possible to use longer incoming lines
Transfer Method.....	Half-Duplex, synchronous
Access	Master - Slave, synchronous
Telegram Length.....	Depending on encodertyp 24 to a maximum of 48 data bits
Saving.....	- no saving in the case of a standardized SSI-encoder or - TR-encoder with 15 bit CRC (Hamming-Distance = 6)
Topology	Point-to-point connection, separated according to clock and data, differential signal transmission according EIA RS-422, complete galvanic separation between the modules electronics and the connected encoders
Transmission Clock Rate	125kHz ... 1MHz
PC-Interface	RS 232 interface without isolation
Number of Axis.....	4 or 8, unused interfaces can be switched off
Cycle Time	Min 500µs (8 axes operation)
Nominal Voltage	5 VDC via S5-peripheral bus
Current Consumption.....	0,4A (typ. 0,25A) / 5V of S5 power unit

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Environmental Data

Electromagnetic compatibility (EMC)	EN 61000-4-2 (IEC-801-2) / EN 61000-4-4 (IEC-801-4)
Operating temperature.....	0 to +80°C
Storage temperature range.....	-40 to +70°C

Firmware Versions

Standard Firmware (Version 1)

- Standard SSI-interface for 24 bit binary- or gray code without data saving (hamming distance = 1)
- Interrupt-controlled data transfer to the SIMATIC-S5
- Cycle time min. 500µs (8 axes operation with binary encoder without scaling and checksum evaluation)

Firmware Options (Version 2)

- TR-encoder with SSI data saving protocol (28 bit binary data and checksum)
(accessible hamming distance = 6)
- Scaling of the encoder positions in the interface module
- redundant data storage of the programming parameters in the EEPROM, secured with checksum
- redundant data storage of the zero information in FRAM's while scaling the encoder positions in the control, secured with checksum
- Counting direction changeover and adjustment of the encoder position are possible by a parameter transfer to the interface card

Customized modifications on request

Interface assignments

Encoder-Interfaces			
Axis 1		Axis 5 *	
Pin-No.	CM-10-SSI	Pin-No.	CM-10-SSI
1	Clock-	1	Clock-
2	Clock+	2	Clock+
3	Data+	3	Data+
4	Data-	4	Data-
5	24V Encoder Supply	5	24V Encoder Supply
6	Ground, 0 V Encoder Supply	6	Ground, 0 V Encoder Supply
Axis 2		Axis 6 *	
Pin-No.	CM-10-SSI	Pin-No.	CM-10-SSI
1	Clock-	1	Clock-
2	Clock+	2	Clock+
3	Data+	3	Data+
4	Data-	4	Data-
5	24V Encoder Supply	5	24V Encoder Supply
6	Ground, 0 V Encoder Supply	6	Ground, 0 V Encoder Supply
Axis 3		Axis 7 *	
Pin-No.	CM-10-SSI	Pin-No.	CM-10-SSI
1	Clock-	1	Clock-
2	Clock+	2	Clock+
3	Data+	3	Data+
4	Data-	4	Data-
5	24V Encoder Supply	5	24V Encoder Supply
6	Ground, 0 V Encoder Supply	6	Ground, 0 V Encoder Supply
Axis 4		Axis 8 *	
Pin-No.	CM-10-SSI	Pin-No.	CM-10-SSI
1	Clock-	1	Clock-
2	Clock+	2	Clock+
3	Data+	3	Data+
4	Data-	4	Data-
5	24V Encoder Supply	5	24V Encoder Supply
6	Ground, 0 V Encoder Supply	6	Ground, 0 V Encoder Supply

PC-Interface (9-pole SUB-D)		
	Signal	Meaning
1	-	not used
2	RS232 TXD	Transmit
3	RS232 RXD	Receive
4	-	not used
5	GND	Reference potential
6	-	not used
7	-	not used
8	-	not used
9	-	not used

* not by CM-10-SSI 4-axes