SIEMENS

SINAMICS

S120
Control Units and additional system components

Manual

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(GH1), 01/2012
6SL3097-4AH00-0BP2

4.4 Sensor Module Cabinet-Mounted SMC20

4.4.1 Description

The Sensor Module Cabinet-Mounted SMC20 evaluates encoder signals and transmits the speed, actual position value, rotor position and, if necessary, the motor temperature and reference point via DRIVE-CLiQ to the Control Unit.

The SMC20 is used to evaluate encoder signals from incremental encoders with SIN/COS (1 Vpp) or absolute encoders with EnDat 2.1 or SSI.

4.4.2 Safety information

⚠ WARNING

The ventilation spaces of 50 mm above and below the component must be observed.

NOTICE

Only one encoder system may be connected per Sensor Module.

Note

There must be no electrical connection between the encoder system housing and the signal cables, or the encoder system electronics. If this is not carefully observed, under certain circumstances the system will not be able to reach the required interference immunity level (there is then a danger of equalization currents flowing through the electronics ground).

⚠ CAUTION

Connecting cables to temperature sensors must always be installed with shielding. The cable shield must be connected to the ground potential at both ends over a large surface area. Temperature sensor cables that are routed together with the motor cable must be twisted in pairs and shielded separately.

4.4.3 Interface description

4.4.3.1 Overview

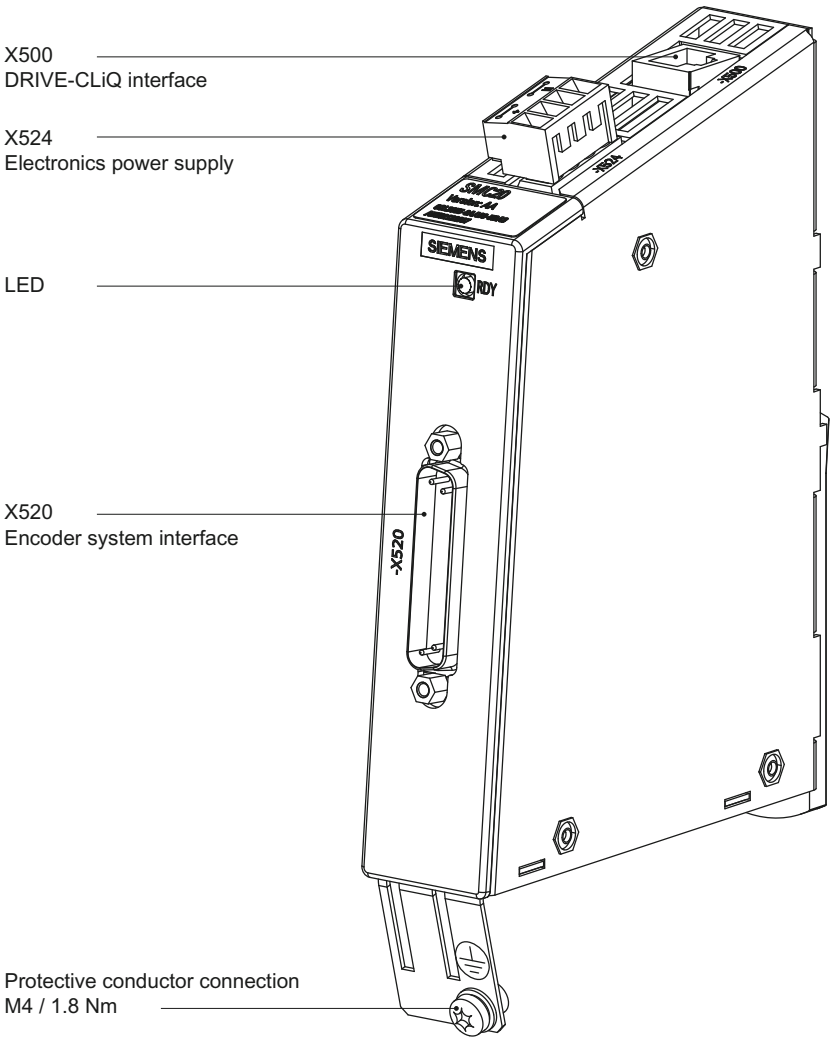
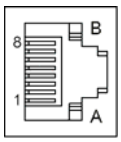


Figure 4-8 Interface description of the SMC20

4.4.3.2 X500 DRIVE-CLiQ interface

Table 4- 8 X500 DRIVE-CLiQ interface

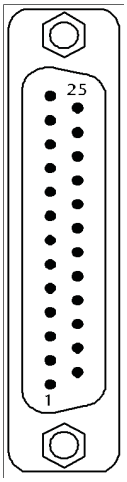
	Pin	Signal name	Technical specifications
	1	TXP	Transmit data +
	2	TXN	Transmit data -
	3	RXP	Receive data +
	4	Reserved, do not use	
	5	Reserved, do not use	
	6	RXN	Receive data -
	7	Reserved, do not use	
	8	Reserved, do not use	
	A	Reserved, do not use	
	B	M (0 V)	Electronics ground
Connector type	RJ45 socket		

The blanking cover for the DRIVE-CLiQ port is included in the scope of delivery.

Blanking covers (50 pieces) Order number: 6SL3066-4CA00-0AA0

4.4.3.3 X520 encoder system interface

Table 4- 9 X520 encoder system interface

	Pin	Signal name	Technical specifications
	1	P encoder	Encoder power supply
	2	M encoder	Ground for encoder power supply
	3	A	Incremental signal A
	4	A*	Inverse incremental signal A
	5	Ground	Ground (for internal shield)
	6	B	Incremental signal B
	7	B*	Inverse incremental signal B
	8	Ground	Ground (for internal shield)
	9	Reserved, do not use	
	10	Clock	Clock, EnDat interface, SSI clock
	11	Reserved, do not use	
	12	Clock*	Inverted clock, EnDat interface, inverted SSI clock
	13	+Temp	Motor temperature measurement KTY84-1C130 (KTY+) Temperature sensor KTY84-1C130 / PTC
	14	P sense	Sense input encoder power supply
	15	Data	Data, EnDat interface, SSI data
	16	M sense	Ground sense input encoder power supply
	17	R	Reference signal R
	18	R*	Inverse reference signal R
	19	C	Absolute track signal C
	20	C*	Inverse absolute track signal C
	21	D	Absolute track signal D
	22	D*	Inverse absolute track signal D
	23	Data*	Inverse data, EnDat interface, Inverse SSI data
	24	Ground	Ground (for internal shield)
	25	-Temp	Motor temperature measurement KTY84-1C130 (KTY-) Temperature sensor KTY84-1C130 / PTC
Connector type:	25-pin SUB D connector		
Measuring current via temperature sensor connection: 2 mA			

NOTICE

The KTY temperature sensor must be connected with the correct polarity
If the sensor is connected with the incorrect polarity, it cannot detect if a motor overheats.

⚠ DANGER

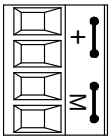
Risk of electric shock!

Only temperature sensors that meet the safety isolation specifications contained in EN 61800-5-1 may be connected to terminals "+Temp" and "-Temp". If safe electrical separation cannot be guaranteed (for linear motors or third-party motors, for example), a Sensor Module External (SME120 or SME125) or Terminal Module TM120 must be used.

If these instructions are not complied with, there is a risk of electric shock!

4.4.3.4 X524 electronics power supply

Table 4- 10 X524 electronics power supply

	Terminal	Function	Technical specifications
	+	Electronics power supply	Voltage: 24 V (20.4 V – 28.8 V) Current consumption: Max. 0.35 A Maximum current via jumper in connector: 20 A
	+	Electronics power supply	
	M	Electronics ground	
	M	Electronics ground	
Max. connectable cross-section: 2.5 mm² Type: Screw terminal 2 (see Appendix A)			

Note

The two "+" or "M" terminals are jumpered in the connector. This ensures that the supply voltage is looped through.