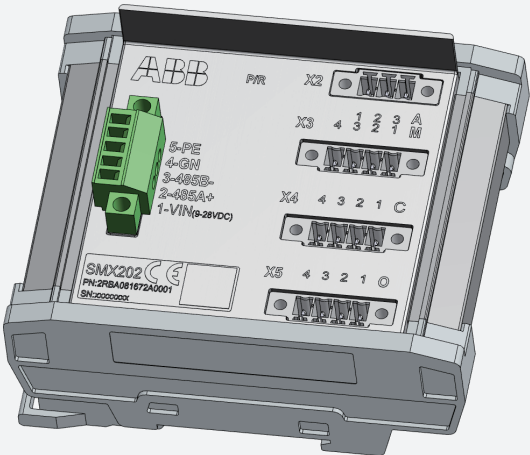
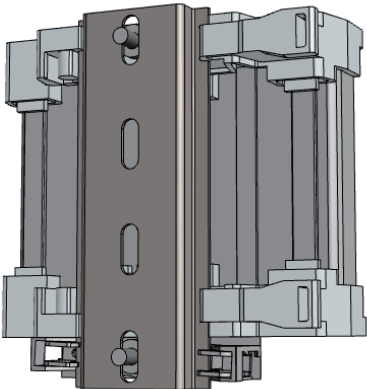


SMX20_ Mechanical Characteristic Sensor

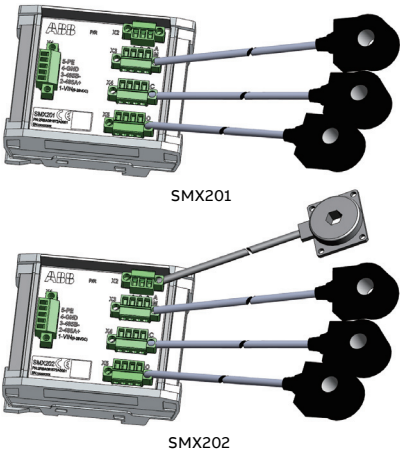
TECHNICAL DATASHEET



Dimension: 91.9 mm*76.0 mm*42.0 mm
Weight: 200 g



Mounted on Standard 35mm DIN Rail



SMX201

SMX202

Overview

The mechanical characteristic sensor SMX20_ is an integrated sensor for measuring current and angle, which utilizes Hall effect technology to measure the CB coil and the motor through the magnetic core, and utilizes rotary potentiometer to obtain the angle value, then transmits these data to ABB's monitoring and diagnostic data concentrator through RS485 communication, where the currents amplitude and timings of CB coils and spring motor, as well as the mechanical characteristics of the CB, can be further processed.

There are 2 optional variants suitable for different applications, the difference is that SMX202 has the angle measurement function while SMX201 does not.

Benefits and Features

- High precision
- Non-intrusive installation
- No direction installation

Terminals X1 definition

Pin	Function	Colour
1	Power+	Brown
2	RS485 A	Gray
3	RS485 B	Black
4	Power-	Blue
5	GND	(Shield)

Connectors definition

Connectors	ID	Function
X2	A	Angle sensor*
X3	M	Charging motor
X4	C	Closing release coil
X5	O	Opening release coil

* This function is only available in SMX202.

Technical data

Measurement characteristics and communication

Description	Value
Measuring range	A: 0...360°
	M: AC 50 Hz 0...5 A rms or DC 0...7.5 A
	C/O: DC 0...7.5 A
Accuracy	A: $\pm 2.5\%$ or $\pm 0.5^\circ$
	M/C/O: $\pm 2.5\%$ or ± 25 mA
Resolution	A: 0.01°
	M/C/O: 0.01 A
Communication protocol	Modbus RTU (RS485)

Power supply

Description	Value
Voltage input	DC 9~28 V*
Power consumption	0.5 W Max
Withstand voltage level (50 Hz, 1 min)	500 V

* It is necessary to ensure the sensor is powered on when applying the measured current.

Environmental conditions

Description	Value
Operating temperature range	-25...55°C
Environment humidity	20...85%, non-condensing 86...106 kPa
Atmospheric pressure	86...106 kPa
Operating altitude	0...5000 m
Transport and storage temperature range	-25...70°C
IP degree of protection	IP 20
Pollution degree	2

EMC compliance

Description	Reference
EMC directive	2014/30/EU
Standard	EN 61326-1 : 2013

Electromagnetic compatibility tests

Description	Test levels	Reference
Resistance to electromagnetic fields	10 V/m (80 MHz...2.7 GHz)	EN/IEC 61000-4-3
Resistance to electrostatic discharge	2-4-8-15 kV (Air)	EN/IEC 61000-4-2
Resistance to conducted disturbances, induced by radio frequency fields	10 V (0.15...80 MHz)	EN/IEC 61000-4-6
Electrical fast transient/burst immunity	2 kV 5 kHz & 100 kHz	EN/IEC 61000-4-4
Damped oscillatory wave immunity	2.5 kV (CM-100 kHz & 1 MHz)	EN/IEC 61000-4-18
	1 kV (DM-100 kHz & 1 MHz)	
Surge immunity	0.5-1-2 kV Line-earth	EN/IEC 61000-4-5
	0.5-1 kV Line-line	
Power frequency magnetic field immunity	300 A/m Pulse	EN/IEC 61000-4-8
	30 A/m Continue	
Pulse magnetic field immunity	1000 A/m Pulse	EN/IEC 61000-4-9
Damped oscillatory magnetic field immunity	100 A/m	EN/IEC 61000-4-10