DATA SHEET

SM560-S, SM560-S-FD-1, SM560-S-FD-4

Safety CPU



1 Ordering data

Type	Description	Part no.
SM560-S	Safety module - CPU, safety related module up to SIL 3	1SAP 280 000 R0001
SM560-S-XC	Safety module - CPU, safety related module up to SIL 3, extreme conditions	1SAP 380 000 R0001
SM560-S-FD-1	Safety module - CPU, safety related module up to SIL 3 with F-Device functionality for 1 PROFIsafe network	1SAP 286 000 R0001
SM560-S-FD-1-XC	Safety module - CPU, safety related module up to SIL 3 with F-Device functionality for 1 PROFIsafe network, extreme conditions	1SAP 386 000 R0001
SM560-S-FD-4	Safety module - CPU, safety related module up to SIL 3 with F-Device functionality for up to 4 PROFIsafe networks	1SAP 286 100 R0001
SM560-S-FD-4-XC	Safety module - CPU, safety related module up to SIL 3 with F-Device functionality for up to 4 PROFIsafe networks, extreme conditions	1SAP 386 100 R0001

2 Dimensions

Dimensions of the safety CPU

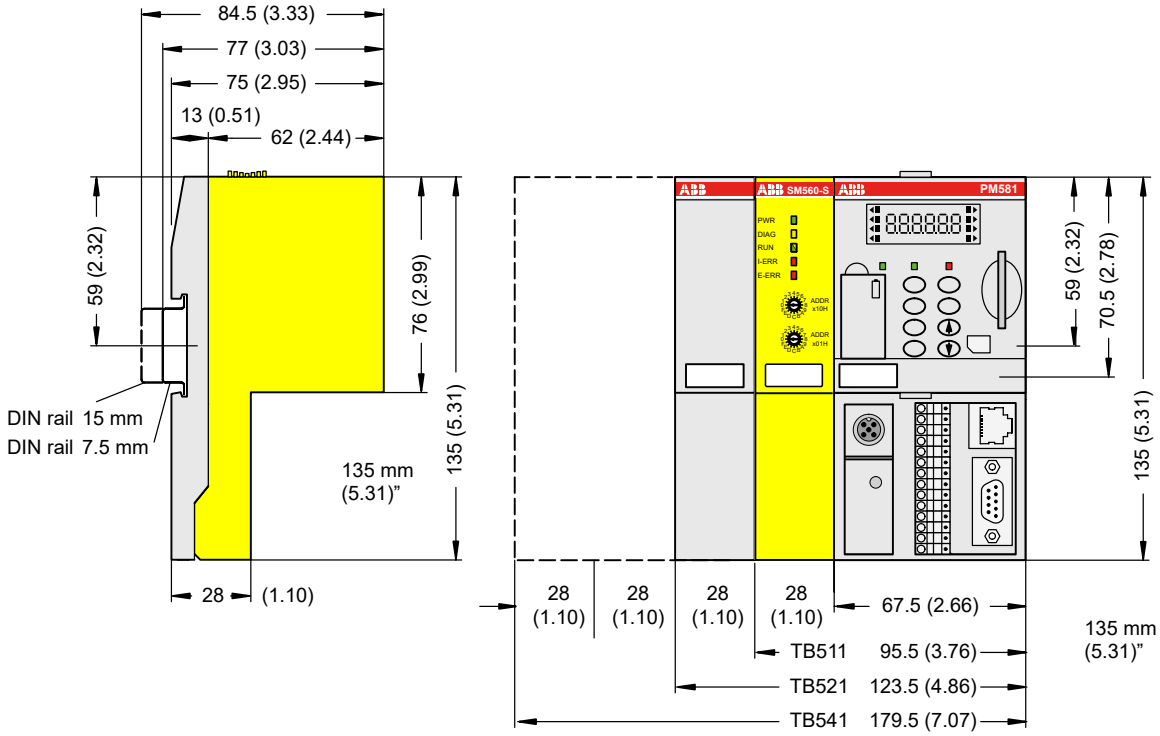


Fig. 1: Dimensions of the safety CPU

3 Technical data

Additional technical data is available in ABB PLC catalog at *www.abb.com/plc*.

> **NOTICE!**
> Safety CPU -XC version is available for usage in extreme environmental conditions
> ↬ *Appendix A "System data for AC500-S-XC" on page 6*.

Memory

Data	Value	Unit
User program memory of SM560-S	1	MB
User program memory of SM560-S-FD-1 and SM560-S-FD-4	1.3	MB
User data memory (thereof 120 kB saved)	1	MB

Performance

Data	Value	Unit
Cycle time - binary	0.05	µs/instruction
Cycle time - word	0.06	µs/instruction
Cycle time - floating-point	0.50	µs/instruction

Voltages, according to EN 61131-2

Data	Value	Unit
Process and supply voltage (without ripple)	24 (-15 %, +20 %)	V DC
Absolute limits (including ripple)	19.2 ... 30	V DC
Ripple	< 5	%
Protection against reverse polarity	10	s



DANGER!
Exceeding the permitted process or supply voltage range (< -35 V DC or > +35 V DC) could lead to unrecoverable damage of the system.

Allowed interruptions of power supply, according to EN 61131-2

Data	Value	Unit
DC supply interruptions	< 10	ms
Time between 2 DC supply interruptions, PS2	> 1	s

Environmental conditions

Data	Value	Unit
Operating temperature*	0 ... +60	°C
Storage temperature	-40 ... +85	°C
Transport temperature	-40 ... +85	°C
Humidity without condensation	max. 95	%
Operating air pressure	> 800	hPa
Storage air pressure	> 660	hPa
Operating altitude	< 2000	m above sea level
Storage altitude	< 3500	m above sea level

* Extended temperature ranges (below 0 °C and above +60 °C) can be supported in special versions of the safety CPU ↳ *Appendix A "System data for AC500-S-XC" on page 6*.

Creepage distances and clearances

The creepage distances and clearances meet the overvoltage category II, pollution degree 2.

Power supply units

For the supply of modules, power supply units according to PELV/SELV specifications must be used.

Electromagnetic compatibility

For information on electromagnetic compatibility refer to the latest TÜV SÜD Report.

Mechanical properties

Data	Value	Unit
Mounting	horizontal (or vertical with derating (maximal operating temperature reduced to +40 °C))	
Degree of protection	IP 20	

Data	Value	Unit
Housing	according to UL 94	
Vibration resistance acc. to EN 61131-2 (all three axes), continuous 3.5 mm	2 ... 15	Hz
Vibration resistance acc. to EN 61131-2 (all three axes), continuous 1 g *	15 ... 150	Hz
Shock test (all three axes), 11 ms half-sinusoidal	15	g
MTBF	168	years

* Higher values on request

Self-test and diagnostic functions

Start-up and runtime tests: Program flow control, RAM, CPU, etc.

Dimensions, weight

Data	Value	Unit
W x H x D	28 x 135 x 75	mm
Weight	~ 100	g

Certifications

CE, cUL (further certifications at *www.abb.com/plc*)