

## Safety Communication Terminal/ Safety Monitor

### Reduces Safety Equipment Wiring

- EN954-1 category 4 compliant
- Safety network can be established simply by connecting the safety slave and monitor to the AS-Interface network.
- Standard slaves and safety slaves can be used in the same network, and no new safety network is necessary.
- Response time 40 ms maximum (time interval after the safety input of safety slave has been shut down until the safety output is turned off)
- A maximum of 31 safety slaves can be connected.
- Stop category 0 or 1 can be selected (stop category 0: when a warning signal is input, the safety relay is shut down instantly; stop category 1: when a warning signal is input, the safety relay is shut down after the machine driving part has moved to safe status)
- The setting of safety monitor can be made easily using the AS-Interface safety monitor configuration software on a Windows PC.



AS-Interface Safety Communication Terminal



AS-Interface Safety Monitor



### Part Numbers

#### Unit

Product	Description	Part Number
SX5A AS-Interface Safety Communication Terminal (Safety Slave)	2 inputs (safety input)	SX5A-AWN20
Base Module	Used with AS-Interface safety communication terminal	SX5A-G1FA
SX5A AS-Interface Safety Monitor	2 safety outputs x 2 circuits	SX5A-MBR02

Base models must be purchased to allow Safety Communication Terminal to connect to network.

### Accessories

Product	Description	Part Number
Safety Monitor Configuration Software	CD-ROM	SX9Y-ASMTR
 Cable	For connecting the safety monitor and PC	SX9Z-PCCABLE
	For connecting two safety monitors	SX9Z-MTRCABLE
Manual	For safety monitor	SX9Z-B760
	For safety monitor configuration software	SX9Z-B762

### Specifications

#### SX5A AS-Interface Safety Monitor

<b>Electrical Specifications</b>	<b>Voltage</b>	24V DC ±15%
	<b>Current</b>	200 mA
	<b>Response Time</b>	<40 msec
	<b>Startup Delay Time</b>	<10s
<b>AS-Interface Communication Specifications</b>	<b>Profile</b>	Monitor 7.F
	<b>ID Code</b>	F
	<b>IO Code</b>	7
	<b>Voltage</b>	18.5 to 31.6V
	<b>Current Draw</b>	45 mA
<b>Configuration Interface Specifications</b>	<b>Interface</b>	RS232C
	<b>Communication Speed</b>	9600 bps, No parity, 1 start bit, 1 end bit, 8 data bits

<b>Input</b>	<b>Start Input</b>	Photocoupler input: High active approx. 10 mA (24V DC)
	<b>External Device Monitor Input</b>	
<b>Output</b>	<b>Message Output (safety on)</b>	PNP transistor output 200 mA Short-circuit/reverse connection protection
	<b>Safety Output</b>	2NO contacts x 2 circuits Maximum contact load AC-15: 230V AC, 3A, DC-13: 24V DC, 1A Continuous current: 3A per circuit
	<b>Fuse</b>	Maximum 4A slow-blow type (external)
	<b>Overvoltage Category</b>	3 (complies with rated operating voltage 300V AC, VDE0110)
<b>Environment Specifications</b>	<b>Operating Temperature</b>	-20 to +60°C (no freezing)
	<b>Storage Temperature</b>	-30 to +70°C (no freezing)
	<b>Degree of Protection</b>	IP20 (for use only in electric control room or control panel of IP54 or higher protection)
<b>Mechanical Specifications</b>	<b>Weight</b>	450 g approx.
	<b>Connection Method</b>	Screw terminal
	<b>Mounting</b>	DIN rail
	<b>Size</b>	45 x 104.2 x 120 mm
	<b>Standards</b>	UL, CSA, TÜV (EN954-1, VDE0801/A1, EN61496-1, EN60947-5-1), AS-International Association, CE

**SX5A AS-Interface Safety Communication Terminal (Safety Slave)**

<b>Indicator Specifications</b>	<b>LED POWER</b>	AS-Interface power: Green
	<b>LED I1/I2</b>	Input status: Yellow
	<b>LED Fault</b>	Communication error or address 0: Red
<b>Electrical Specifications</b>	<b>Operating Voltage (Ue)</b>	26.5 to 31.6V (from AS-Interface)
	<b>Operating Current (Ie)</b>	<70mA (without connecting input devices)
<b>Input</b>	<b>Input Points</b>	Mechanical switch 2 points With cross check Cable length <30m
	<b>Power Supply</b>	From AS-Interface
	<b>Operation Level</b>	10 mA
<b>Program Information</b>	<b>Profile</b>	S-0.B.E
	<b>ID Code</b>	0
	<b>ID2 Code</b>	E
<b>Data Bit</b>	<b>D0/D1</b>	Depends on the switch 1 input status ON: dynamic code OFF: 0
	<b>D2/D3</b>	Depends on the switch 2 input status ON: dynamic code OFF: 0
<b>Parameter Bit</b>	<b>P0, P1, P2, P3</b>	Unused
<b>Ambient Temperature</b>	<b>Operating Temperature</b>	-25 to +55°C (no freezing)
	<b>Storage Temperature</b>	-25 to +85°C (no freezing)
<b>Structure Specifications</b>	<b>Degree of Protection</b>	IP67 (EN 60529 compliant) *
	<b>Connection Method</b>	AS-Interface: cable-piercing method
	<b>Applicable Base Module</b>	SX5A-G1FA
	<b>Applicable Wire Diameter</b>	ø7mm (8AWG)
	<b>Weight</b>	180g
	<b>Installation Method</b>	DIN rail or panel mounting
	<b>Standards</b>	UL/c-UL, TÜV (EN 954-1, EN 60947-5-3, EN 51078, AS-Interface Association, CE



\* See the instruction manual of AS-Interface safety communication terminal.

PLCs

Operator Interfaces

Automation Software

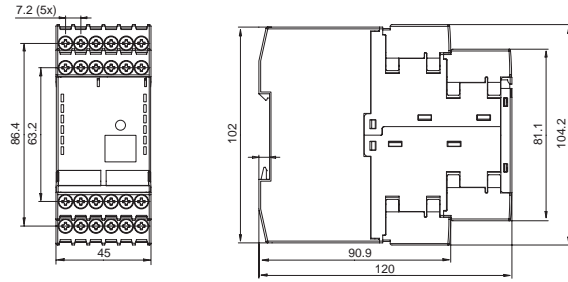
Power Supplies

Sensors

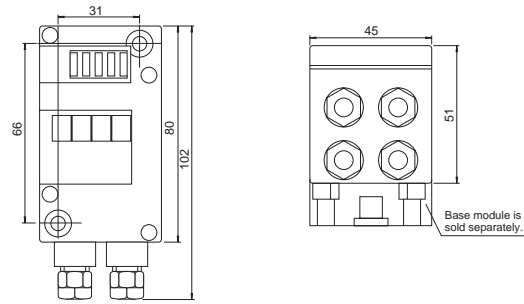
Communication & Networking

## Dimensions

### AS-Interface Safety Monitor



### AS-Interface Safety Communication Terminal

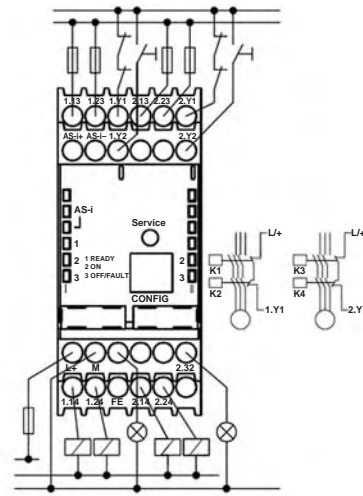


## Wiring

### AS-Interface Safety Monitor Terminal Assignment

Terminal	Description
AS-+	Connection to the AS-Interface bus
AS-	
L+	+24V DC / supply voltage
M	GND / reference ground
FE	Functional ground
1.Y1	EDM1 / contactor monitoring input (Channel 1)
1.Y2	Start1 / start input (Channel 1)
1.13	Switching output 1 (Channel 1)
1.14	
1.23	Switching output 2 (Channel 1)
1.24	
1.32	Safety on / message output 1 (Channel 1)
2.Y1	EDM2 / contactor monitoring input (Channel 2)
2.Y2	Start2 / start input (Channel 2)
2.13	Switching output 1 (Channel 2)
2.14	
2.23	Switching output 2 (Channel 2)
2.24	
2.32	Safety on / message output 2 (Channel 2)

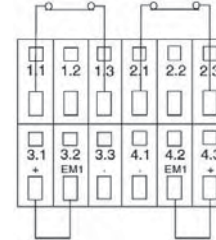
### Wiring Example



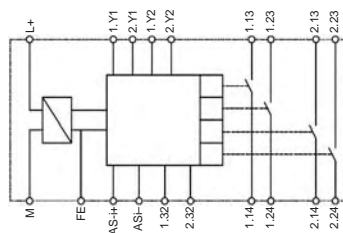
### AS-Interface Safety Communication Terminal Terminal Assignment

Terminal	Description
1.1	Mechanical switch 1 +
1.2	Not used
1.3	Mechanical switch 1 -
2.1	Mechanical switch 2 -
2.2	Unused
2.3	Mechanical switch 2 +
3.1	Not used
3.2	Not used
3.3	Not used
4.1	Not used
4.2	Not used
4.3	Not used

### Wiring Example



### Block Diagram



- power supply unit
- control logic
- control for safety switching output 1, channel 1
- control for safety switching output 2, channel 1
- control for safety switching output 1, channel 2
- control for safety switching output 2, channel 2

### Indicators

