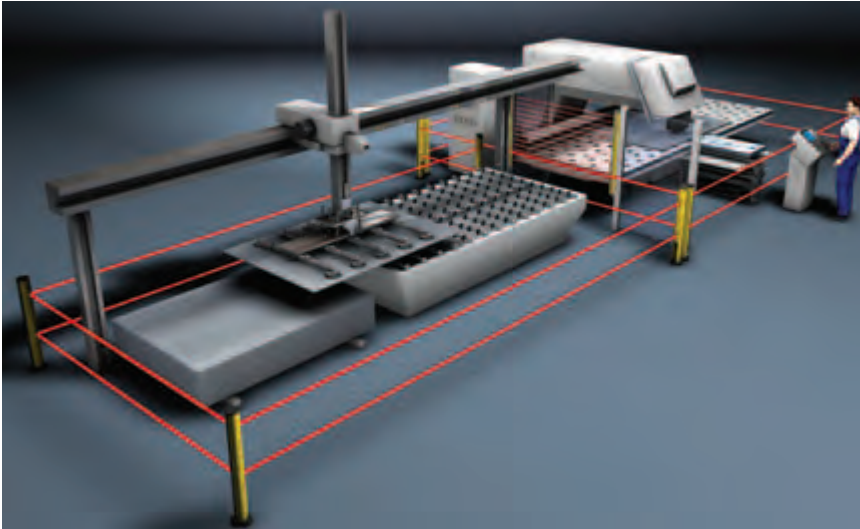


AS-Interface Safety at Work

Safety Monitor, ASM2E



Coupling adjacent AS-i networks with the ASM2E Safety Monitor provides the option of a cross-network E-STOP connection and a global restart, especially with large and linked systems.



The Muting functionality enables pallets to pass by the active opto-electronic protective device without any process interruption with both the ASM1E and the ASM2E Safety Monitor.

The ASM2E Safety Monitor has all the functionalities and features of the ASM1E Safety Monitor. Several safety-related actuators, such as drives or valve modules, can be monitored and safely switched simultaneously with just one ASM2E Safety Monitor. This means, for example, that in one conveyor line all drives in an actuator group can be blocked or released at the same time. Adjacent AS-i networks can also be safety-related linked with the ASM2E Safety Monitor, so that, for example, if an E-STOP button is pressed in an AS-i network, the adjacent network also switches off immediately. And adjacent networks can also be released in the same way.

The status information of the safety and signal outputs can also be retrieved from the respective other network for diagnostics purposes. A PC is not required to swap out the monitor or an actuator slave. For the user this means an efficient and economic use of their existing AS-i infrastructure.

Typical areas of application

- Coupling adjacent AS-i networks in linked systems
- Safe, simultaneous drive switch-off in conveyor systems
- Applications in packaging systems, car manufacturing, storage systems, machine tools, processing centers, big production systems

SAFETY MONITOR, ASM2E

Important technical data, overview

SIL in accordance with IEC 61508 and SILCL in accordance with IEC/EN 62061	SIL 3	
Performance Level (PL) in accordance with EN ISO 13849-1	PL e	
Category in accordance with EN ISO 13849	4	
STOP category in accordance with IEC/EN 60204-1	0 and 1	
Supply voltage	24 V DC, ±15%	
System response time (without sensor/actuator response time)	Max. 40 ms	
Protection rating	IP 20	
Ambient temperature, operation	-20...+60°C	
Dimensions (W x H x D)	45 mm x 105 mm x 120 mm	
Number of Safety Monitors per AS-Interface network	4 (with maximum 31 integrated AS-i slaves)	
Safety-related switching outputs	ASM2E/1	ASM2E/2
Safety-related switching outputs (OSSDs)	1	1
Safety-related switching outputs (OSSDs), synchronous with AS-i switching signal		1
Safe AS-i switching signal for safe actuators or coupling adjacent networks	1	1
Safety-related switching outputs (OSSD), potential-free	1 A, 24 V DC / 3 A, 230 V AC	

Special features

- **Safety-related control of safe AS-i actuators with same safe AS-i address**
- **Higher level start and E-STOP functions with safety-related coupling of adjacent AS-i networks**
- **Help signals for start/restart interlock status**
- **AS-i actuator error restart**
- **Additionally: All ASM1E Safety Monitor functions and features are provided**



Features



Further information

Further information	Page
● Ordering information	324
● Electrical connection	325
● Technical data	326
● Dimensional drawings	327
● Accessories ordering information	328

AS-Interface Safety at Work

Functions

	ASM2E/1	ASM2E/2
Number of safety-related switching outputs (OSSDs)	1	2
Number of configurable function modules	48	48
PC configuration and diagnostics interface	RS 232	RS 232
Monitoring modules with contact bounce filter	●	●
Service button for manual error unlocking and automatic device swap-out of the safe AS-i slave	●	●
Status LED display for AS-Interface communication, OSSD, start/restart interlock, protective mode, errors	●	●
System signal output	●	●
Selectable functions for AS-i actuator		
AS-i actuator error unlocking	●	●
Start/restart interlock (RES)	●	●
Dynamic contactor monitoring (EDM)	●	●
Further functions (can be configured with asimon configuration and diagnostics software)		
Functions as with ASM1E, see page 316		

Ordering information

ASM2E

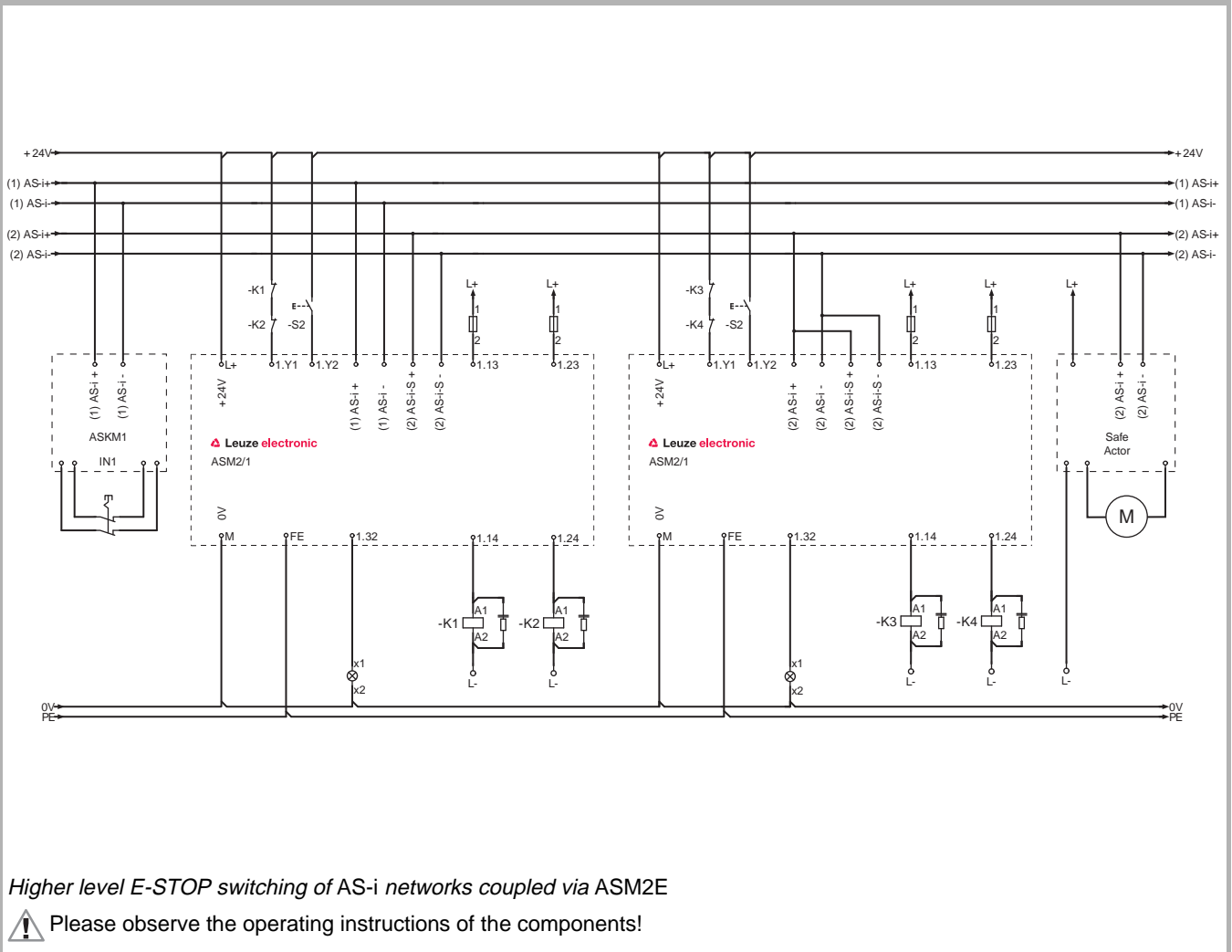
Included in delivery: Device front screen for protection and sealing; connecting and operating instructions (short version)

Functions: Monitoring the AS-i actuators, coupling AS-i networks, global E-STOP and restart, selectable start/restart interlock, contactor monitoring, STOP 0/STOP 1, PC diagnostics interface

Art. no.	Article	Description	Safety-related switching outputs (OSSDs)
580028	ASM2E/1	AS-i Safety Monitor, extended, AS-i output	1 release circuit, 1 AS-i switching signal
580029	ASM2E/2	AS-i Safety Monitor, extended, AS-i output	2 release circuits, 1 AS-i switching signal
580057	ASM2E-m/1	AS-i Safety Monitor, extended, Muting	1 release circuit (relay output), 1 AS-i switching signal
580058	ASM2E-m/2	AS-i Safety Monitor, extended, Muting	2 release circuits (relay output), 1 AS-i switching signal

Electrical connection

ASM2E connection example



Machine Safety

Machine Safety Services

Safety Engineering Software

Safety Laser Scanners

Safety Light Curtains

Multiple Light Beam Safety Devices

Safety Sensor Sets

Single Light Beam Safety Devices

AS-Interface Safety at Work

PROFIsafe Sensors

AS-Interface Safety at Work

Technical data

General system data		
SIL in accordance with IEC 61508 and SILCL in accordance with IEC/EN 62061	SIL 3	
Performance Level (PL) in accordance with EN ISO 13849-1	PL e	
Probability of a failure to danger per hour (PFH _d)	9.10 x 10 ⁻⁹ 1/h	
Service life (T _M) in accordance with EN ISO 13849-1	20 years	
Number of cycles until 10 % of the components have a failure to danger (B _{10d})	With DC1 (ohmic load)	On request
	With AC1 (ohmic load)	
	With DC13 (inductive load)	10,000,000 (I ≤ 2 A, 24 V)
	With AC15 (inductive load)	100,000 (2 A, 230 V) 250,000 (1 A, 230 V) 540,000 (0.5 A, 230 V)
	Low load (20% nominal load)	On request
Category in accordance with EN ISO 13849	4	
STOP category in accordance with IEC/EN 60204-1	0 and 1	
Supply voltage	24 V DC, ±15%	
System response time (without sensor/actuator response time)	Max. 40 ms	
Readiness delay	Max. 10 s	
Protection rating	IP 20 (only suitable for use in electrical operating rooms/cabinets with IP 54 minimum protection rating)	
Ambient temperature, operation	-20...+60°C	
Ambient temperature, storage	-30... +70°C	
Dimensions (W x H x D)	45 mm x 105 mm x 120 mm	
Housing material	Polyamide PA 66	
Mounting	Snap-on fastening on DIN rails in accordance with EN 50022	
Connection system	1x 0.5 to 4.0 mm ² and 2x 0.5 to 2.5 mm ² (single-wired) 1x 0.5 to 2.5 mm ² and 2x 0.5 to 1.5 mm ² (multi-wire) 2x 20 to 14 (AWG)	
Current consumption	150 mA (ASM1/1, ASM1E/1), 200 mA (ASM1/2, ASM1E/2)	
Number of Safety Monitors per AS-Interface network	4 (with maximum 31 AS-Interface slaves)	
AS-i data		
AS-i profile	Monitor 7.F	
AS-i voltage range	18.5...31.6 V	
AS-i current consumption	< 45 mA	
Configuration interface		
RS 232	9600 baud, no parity, 1 start bit, 1 stop bit, 8 data bits	

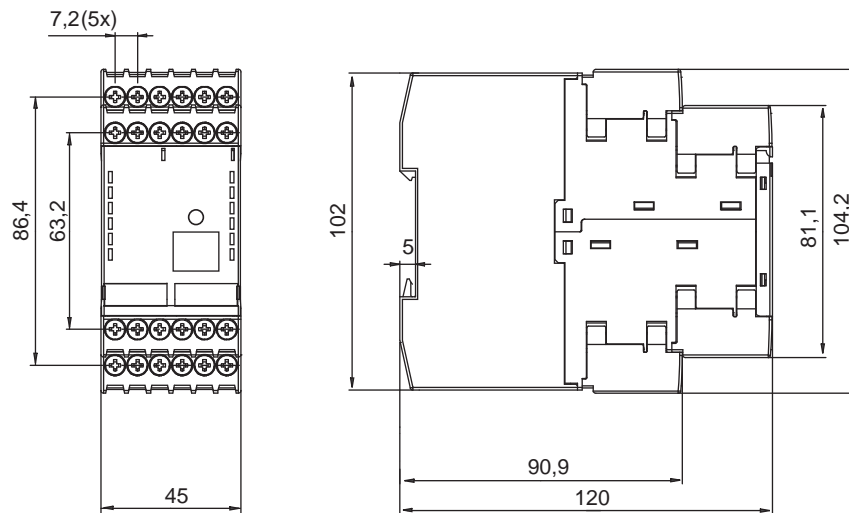
SAFETY MONITOR, ASM2E

Technical data

Inputs and outputs		
Input start	Opto-coupling input (high-active), input current approx. 10 mA with 24 V DC	
Input feedback circuit	Opto-coupling input (high-active), input current approx. 10 mA with 24 V DC	
Signal output ("Safety on" – OSSDs active)	pnp transistor output, 200 mA, short circuit and reverse-connect protection	
Safety-related switching outputs	ASM2E/1	ASM2E/2
Safety-related switching outputs (OSSDs)	1	1
Safety-related switching outputs (OSSDs), synchronous with AS-i switching signal		1
Safe AS-i switching signal for safe actuators or coupling adjacent networks	1	1
Safety-related switching outputs (OSSD), potential-free	1 A, 24 V DC / 3 A, 230 V AC	
Fuse	External with max. 4 A MT	
Overvoltage category	3 (for rated operating voltage, 300 V AC in accordance with VDE 0110 Part 1)	

Please note the additional information in the connecting and operating instructions at www.leuze.com/asi.

Dimensional drawings



AS-Interface Safety at Work ASM2E

Dimensions in mm

Our 3D CAD models can be found under: www.leuze.com/3d-cad-models.