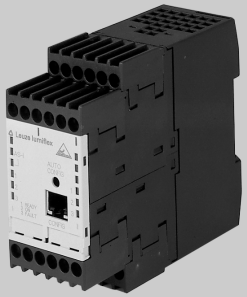

607019 -01/06
Subject to change without prior notice

Connection and Operating Instructions AS-i Safety Monitor ASM1, ASM1E (Short Description)

Notes on using these connection and operating instructions

This connecting and operating instructions contain information regarding the proper and effective use of the AS-i Safety monitor.

Safety precautions and warnings are designated by the symbol ⚠.

Leuze lumiflex GmbH + Co. KG is not liable for damage resulting from improper use of its equipment. Familiarity with these instructions constitutes part of the knowledge required for proper use.

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This short description of the connection and operating instruction is part of the scope of delivery.

⚠ The AS-i safety monitor is only suitable for use in electrical operating rooms / switching cabinets with minimum protection class IP54.

⚠ For connection and commissioning of the AS-i safety monitor the knowledge is assumend of the connecting und operating instructions as well as operating instructions of asimon configuration and diagnostic software (see accessories – ordering information)

	Warning:
	Hazardous voltage can cause electrical shock and burns. Disconnect power before proceeding with any work on this equipment.

⚠ Depending on the choice of safety components to be used the safety system as a whole may also be assigned to a lower safety category.

Application

The AS-i safety monitor monitors within an AS-i system the safe slaves (e.g. Emergency-STOP push button) which have been assigned with the configuration software asimon. Depending on the device model, up to two dependent or independent OSSDs with contactor monitoring are available. In the event of a stop request or a defect, the AS-i safety monitor safely switches the system off in protective operation mode with a maximum reaction time of 40 ms.

Mixed operation of standard components and safe components is possible.

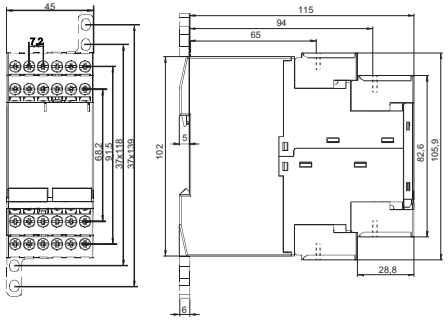
Multiple AS-i safety monitors can be used within an AS-i system. In this way, a safe slave can be monitored by multiple AS-i safety monitors.

The AS-i safety monitor is approved for safety applications up to Category 4 in accordance with EN 954-1.

Electrical installation

Electrical installation is to be performed by trained expert personnel. During installation care must be taken that supply and signal leads and also the AS-i bus cable are laid separately from power cables. In the switchgear cabinet it must be ensured that appropriate spark-quenching equipment is used with contactors. Where drive motors and brakes are used, attention must be paid to the installation instructions in the corresponding operating instructions. Please note that the maximum line length of the AS-i bus cable is 100m. Cables above that length require the use of an AS-i repeater.

Dimensioned drawing



General technical data

Electrical data	
Operating voltage U_b	24 V DC +/- 15 %
Residual ripple	< 15 %
Rated operating current	ASM1/1, ASM1E/1: 150 mA; ASM1/2, ASM1E/2: 200 mA
Response time	< 40 ms
Switch-on delay	< 10 s
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
Inputs and outputs	
"Start" input	Optical coupling input (high active), input current approx. 10 mA at 24 V DC
"Contactor monitoring (EDM)" input	Optical coupling input (high active), input current approx. 10 mA at 24 V DC
Message output "safety on"	PNP transistor output, 200 mA, short-circuit and polarity-reversal protection
Safety output	Potential-free make contact, max. contact load: 1 A DC-13 at 24 V DC 3 A AC-15 at 230 V AC Thermal continuous current: 3 A per output circuit
Fusing	External with max. 4 A slow blow
Overvoltage category	3, for rated operating voltage 300 V AC acc. to VDE 0110 part 1
Environmental data	
Operating temperature	-20 ... +60 °C
Storage temperature	-30 ... +70 °C
Protection class	IP 20
Mechanical data	
Dimensions (WxHxD)	45 mm x 105 mm x 120 mm
Housing material	Polyamide PA 66, black
Weight	ASM1/1, ASM1E/1: approx. 350 g; ASM1/2, ASM1E/2: approx. 450 g
Mounting	Snap-on mounting on top-hat rail acc. to EN 50022
Connection	M 3,5 — 0,8 1,2 Nm / 7 to 10,3 LB.IN 10 — 1x (0,5 4,0) mm² / 2x (0,5 2,5) mm² 10 — 1x (0,5 2,5) mm² / 2x (0,5 1,5) mm²

⚠ It is essential to adhere to the prescribed fusing; this is the only way of guaranteeing safe disconnection in the event of a fault.

Connection ASM1/1, ASM1E/1 and terminal assignment (Fig. 1)

Terminal	Signal / description
AS-i+	Connection at the AS-i bus
AS-i–	
L+	+24 V DC / supply voltage
M	GND / reference ground
FE	Functional earth
1.Y1	EDM / contactor monitoring input
1.Y2	Start / start input
1.13	Switching output 1
1.14	
1.23	Switching output 2
1.24	
1.32	Safety on / message output

Connection ASM1/2, ASM1E/2 and terminal assignment (Fig. 2)

Terminal	Signal / description
AS-i+	Connection at the AS-i bus
AS-i–	
L+	+24 V DC / supply voltage
M	GND / reference ground
FE	Functional earth
1.Y1	EDM 1 / contactor monitoring input, channel 1
1.Y2	Start 1 / start input, channel 1
1.13	Switching output 1, channel 1
1.14	
1.23	Switching output 2, channel 1
1.24	
1.32	Message output 1 "Safety on" channel 1
2.Y1	EDM 2 / contactor monitoring input, channel 2
2.Y2	Start 2 / start input, channel 2
2.13	Switching output 1, channel 2
2.14	
2.23	Switching output 2, channel 2
2.24	
2.32	Message output 2 "Safety on", channel 2

LED indicators ASM1, ASM1E (Fig. 3)

LED	Colour	Meaning
AS-i 1	off	no supply
	green, continuous	AS-i supply present
AS-i 2	off	normal operation
	red, continuous	communication error
1 READY (per channel)	off	–
	yellow, continuous	startup/restart-disable active
	yellow, flashing	external test required
2 ON (per channel)	off	contacts of the output switching element open
	green, continuous	contacts of the output switching element closed
	green, flashing	delay time runs in event of Stop Category 1
3 OFF/FAULT (per channel)	off	contacts of the output switching element closed
	red, continuous	contacts of the output switching element open
	red, flashing	error on level of the monitored AS-i components
1 READY 2 ON 3 OFF/FAULT (per channel)	simultaneously flash rapidly	internal device error

Ordering information:

Type	Property	Order No
ASM1/1	AS-i safety monitor, 1 safety relay output	580020
ASM1/2	AS-i safety monitor, 2 safety relay outputs	580021
ASM1E/1	AS-i safety monitor, 1 safety relay output; extended function	580024
ASM1E/2	AS-i safety monitor, 2 safety relay outputs; extended function	580025

Accessories – ordering information:

Type	Property	Order No.
ASM1-SWC	ASM1-start up set with Software asimon, connection and operating instructions ASM1-TM, Software user manual ASM1-SM, PC-programming cable ASM1-PK and device exchange data transfer cable ASM1-DK	580032
ASM1-PK	ASM1-PC-programming cable	580030
ASM1-DK	ASM1-Device exchange data transfer cable	580031
ASM1-TM	Connection and operating instructions AS-i safety monitor ASM1	607020
ASM1-SM	Software user manual - asimon - configuration and diagnostics software for AS-i safety monitor ASM1	607030

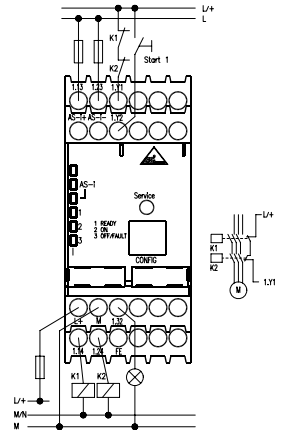


Fig. 1: Connection overview ASM1/1, ASM1E/1

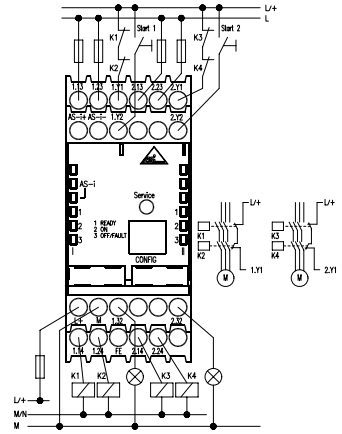


Fig. 2: Connection overview ASM1/2, ASM1E/2

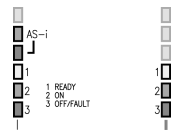
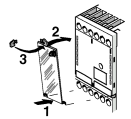


Fig. 3: LED indicators in device

Sealable cap



Sealable cap to protect against unauthorized adjustment and against ESD (included in scope of delivery).