AS-Interface
ASIsafe

Overview

SIGUARD 3RG78 44 and 3SF78 44 light curtains and arrays (for AS-Interface) <u>with integrated evaluation unit</u> for category 4 to EN 954-1

- Resolution: 14, 30, and 50 mm
- Protective field height: 150 mm to 3,000 mm
- 2, 3, or 4-beam light arrays
- Cascading of host and guest devices for higher or longer protective fields or for angular arrangement (optional)

Two standard mounting brackets (3RG78 48-0AB) are supplied with all devices (also available as accessories).

Technical specifications

Type	3SF78 44
Safety category to EN, IEC 61496-1, -2	Type 4
Protective field height	
• 14 mm and 30 mm resolution	150 ... 1800 mm
• for 50 mm resolution	450 ... 3000 mm
Protective field width, range	
• for 14 mm resolution	0.3 ... 6 m
• for 30 and 50 mm resolution	0.8 ... 18 m
Detection capability (resolution)	14 mm, 30 mm, 50 mm
Supply voltage (emitter and receiver)	24 V DC ± 20% (external power pack with safe isolation and compensation of 20 ms voltage dip is necessary)
Residual ripple	< 5%
Current input	
• Emitter	75 mA
• Receiver	180 mA (without external load)
General value for external fuse in the transmitter and receiver supply leads	4 A
Wave length	880 nm (infrared)
Synchronization	Optically between emitter and receiver
Ambient temperature	
• Operation	0 ... +50 °C
• Storage	–25 ... +70 °C
Relative humidity	15 ... 95 %
Degree of protection	IP65
Safety class to DIN VDE 0106	III
Vibration resistance	5 g, 10 to 55 Hz acc. to IEC/EN 60068-2-6
Shock resistance	10 g, 16 ms to IEC/EN 60068-2-29

Signal inputs and outputs (local socket, optional)

Signal inputs	
• Restart inhibit unlocking	1 button with 1 NO contact (floating)
- Min. switching time	300 ms
- Max. switching time	4 s
• Teach-in	2-pole key-operated switch (selector switch) (floating)
- Simultaneity	< 500 ms
Voltage output (for command devices or safety sensors only)	24 V DC ± 20 %, max 0.5 A

Receiver/transceiver machine interface, ASIsafe

OSSDs safety switching outputs	4 bit AS-i data		
	Minimum	Standard	Maximum
Permissible cable length	-	-	100 m
Restart time after beam interruption	-	140 ms	-
Slave address area	1	-	31
Slave address area (WE)	0 (ex works)		
ID code / IO code transmitter	-		
ID code receiver	B		
IO code receiver	0		
AS-i profile	Secure slave		
Cycle time in accordance with AS-I specification	5 ms		
OSSD response time	See table above		
Additional response time of the AS-i system	40 ms		

■ **Selection and Ordering data**

Light curtains (category 4) with internal processing unit, 14 mm and 30 mm resolution
Blanking function package, ASIsafe

Light curtain height [mm]	Type	Standard device 14 mm resolution	Standard device 30 mm resolution
300	Receiver	3SF7844-6BB04-0SS1	3SF7844-6BD04-0SS1
300	Emitter	3SF7844-6SB04-0SS0	3SF7844-6SD04-0SS0
450	Receiver	3SF7844-6BB06-0SS1	3SF7844-6BD06-0SS1
450	Emitter	3SF7844-6SB06-0SS0	3SF7844-6SD06-0SS0
600	Receiver	3SF7844-6BB08-0SS1	3SF7844-6BD08-0SS1
600	Emitter	3SF7844-6SB08-0SS0	3SF7844-6SD08-0SS0
750	Receiver	3SF7844-6BB11-0SS1	3SF7844-6BD11-0SS1
750	Emitter	3SF7844-6SB11-0SS0	3SF7844-6SD11-0SS0
900	Receiver	3SF7844-6BB13-0SS1	3SF7844-6BD13-0SS1
900	Emitter	3SF7844-6SB13-0SS0	3SF7844-6SD13-0SS0
1050	Receiver	3SF7844-6BB15-0SS1	3SF7844-6BD15-0SS1
1050	Emitter	3SF7844-6SB15-0SS0	3SF7844-6SD15-0SS0
1200	Receiver	3SF7844-6BB17-0SS1	3SF7844-6BD17-0SS1
1200	Emitter	3SF7844-6SB17-0SS0	3SF7844-6SD17-0SS0
1350	Receiver	On request	3SF7844-6BD20-0SS1
1350	Emitter	On request	3SF7844-6SD20-0SS0
1500	Receiver	On request	3SF7844-6BD22-0SS1
1500	Emitter	On request	3SF7844-6SD22-0SS0
1650	Receiver	On request	3SF7844-6BD24-0SS1
1650	Emitter	On request	3SF7844-6SD24-0SS0
1800	Receiver	On request	3SF7844-6BD26-0SS1
1800	Emitter	On request	3SF7844-6SD26-0SS0

Light curtains (category 4) with internal processing unit and 30 mm resolution
Muting function package, ASIsafe

Light curtain height [mm]	Type	Standard device	Host device	Guest device
300	Receiver	3SF7844-6MD04-0SS1	On request	3RG7842-6DD21
300	Emitter	3SF7844-6SD04-0SS0	On request	3RG7842-6DD20
450	Receiver	3SF7844-6MD06-0SS1	On request	3RG7842-6DE21
450	Emitter	3SF7844-6SD06-0SS0	On request	3RG7842-6DE20
600	Receiver	3SF7844-6MD08-0SS1	On request	3RG7842-6DF21
600	Emitter	3SF7844-6SD08-0SS0	On request	3RG7842-6DF20
750	Receiver	3SF7844-6MD11-0SS1	On request	3RG7842-6DG21
750	Emitter	3SF7844-6SD11-0SS0	On request	3RG7842-6DG20
900	Receiver	3SF7844-6MD13-0SS1	On request	3RG7842-6DH21
900	Emitter	3SF7844-6SD13-0SS0	On request	3RG7842-6DH20
1050	Receiver	3SF7844-6MD15-0SS1	On request	3RG7842-6DJ21
1050	Emitter	3SF7844-6SD15-0SS0	On request	3RG7842-6DJ20
1200	Receiver	3SF7844-6MD17-0SS1	On request	3RG7842-6DK21
1200	Emitter	3SF7844-6SD17-0SS0	On request	3RG7842-6DK20
1350	Receiver	3SF7844-6MD20-0SS1	On request	3RG7842-6DL21
1350	Emitter	3SF7844-6SD20-0SS0	On request	3RG7842-6DL20
1500	Receiver	3SF7844-6MD22-0SS1	On request	3RG7842-6DM21
1500	Emitter	3SF7844-6SD22-0SS0	On request	3RG7842-6DM20
1650	Receiver	3SF7844-6MD24-0SS1	On request	3RG7842-6DN21
1650	Emitter	3SF7844-6SD24-0SS0	On request	3RG7842-6DN20
1800	Receiver	3SF7844-6MD26-0SS1	On request	3RG7842-6DP21
1800	Emitter	3SF7844-6SD26-0SS0	On request	3RG7842-6DP20

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**AS-Interface light curtains and arrays (Cat. 4)
with integrated evaluation unit**

■ **Selection and Ordering data** (continued)

Light curtains (category 4) with internal processing unit and 18 m range
*Muting function package, ASIsafe*

No. of beams	Beam distance [mm]	Type	Standard device
4 beam	300	Receiver	**3SF7844-6MM50-0SS1**
4 beam	300	Receiver with integrated indicator light	**3SF7844-6MM50-0KS1** NEW
4 beam	300	Emitter	**3SF7844-6SM50-0SS0**
3 beam	400	Receiver	**3SF7844-6MP50-0SS1**
3 beam	400	Receiver with integrated indicator light	**3SF7844-6MP50-0KS1** NEW
3 beam	400	Emitter	**3SF7844-6SP50-0SS0**
2 beam	500	Receiver	**3SF7844-6MS50-0SS1**
2 beam	500	Receiver with integrated indicator light	**3SF7844-6MS50-0KS1** NEW
2 beam	500	Emitter	**3SF7844-6SS50-0SS0**

Transceiver (category 4) with internal processing unit and 6 m resolution
Muting function package, ASIsafe

No. of beams	Beam distance [mm]	Type	Standard device
4 beam	300	Receiver with integrated indicator light	**3SF7844-6MM50-0KS1** NEW
2 beam	500	Transceiver	**3SF7844-6MS50-0ST0**
Reflective mirror for transceiver			**3RG7848-0TL**

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Dimensional drawings

Standard 3RG78 44 and 3SF78 44 light curtains and arrays, with integrated evaluation unit

3SF78 44 light arrays with integrated evaluation unit, additional dimensions
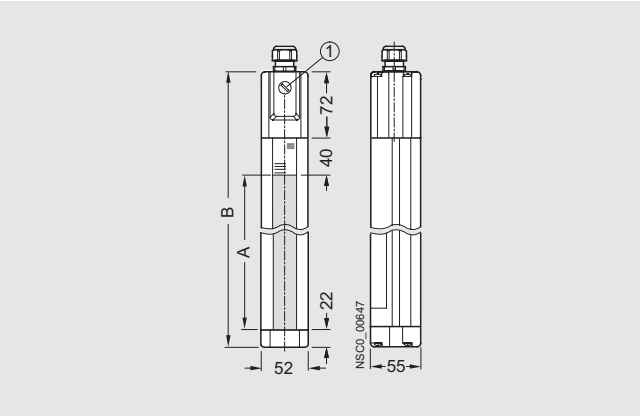
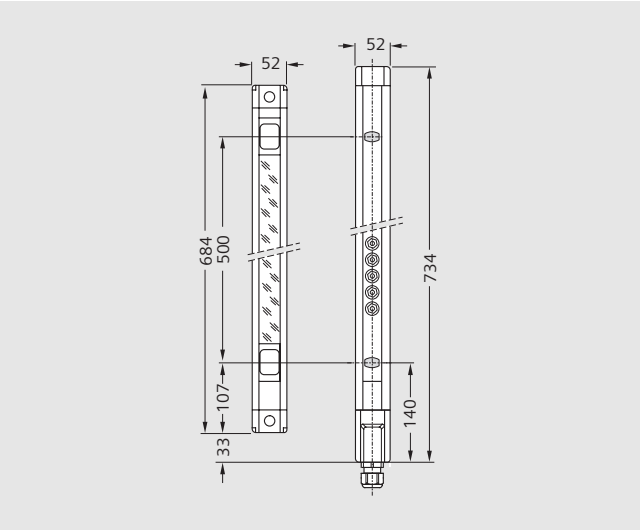| 1	Screw cap Pg 9 (receiver only, for local interface)
A	Protective field height (see order data)
B	Total length = protective field height A + 134 mm
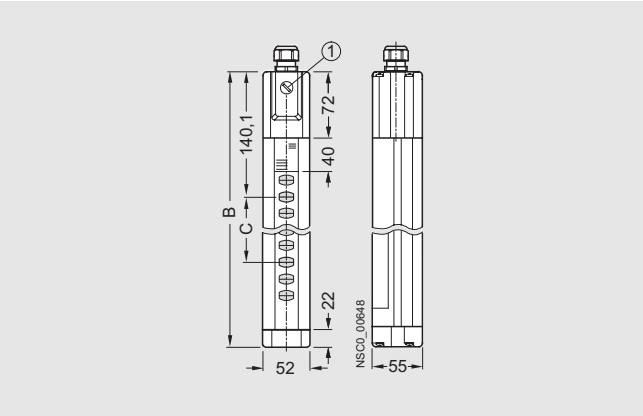
Additional dimensions (for light arrays only)

Type	B	C	Beams
3SF78 44-..M	1,184 mm	300 mm	4
3SF78 44-..P	1,034 mm	400 mm	3
3SF78 44-..S	734 mm	500 mm	2

3RG78 48-0TL reflective mirror (left) and muting transceiver (right)

AS-Interface
Power supply units

Overview

AS-Interface Power Supplies are an integral part of an AS-Interface network. They supply the electronics of the system (AS-Interface Module und AS-Interface Master) and the connected sensor technology. Furthermore, the integrated data decoupling of AS-Interface Power Supplies ensures the separation of data and energy, thus enabling AS-Interface to transmit data and energy on a single line.

Benefits

- Compact dimensions save space in control cabinets or in the field.
- Higher output rating enables connection of even more AS-Interface nodes.
- Integrated ground-fault and overload detection ensures that applications are more reliable and saves the need for additional components.
- Diagnostics memory, remote indication and remote reset allow fast detection of faults in the system, thus reducing downtimes.
- Fast and stable installation of devices thanks to spring-loaded connections.
- Removable terminal blocks allow fast component replacement, thus reducing downtimes.
- The ultra-wide input range of the 8A version permits 1 and 2-phase operation - so no need for connection of a neutral conductor.
- UL/CSA approval means the power supply units can be used worldwide

Application

AS-Interface Power Supplies are always used in conjunction with AS-Interface networks.

Technical specifications

|	AS-Interface Power Supply Single output IP20 Output current 3 A 3RX9 501-0BA00 new	AS-Interface Power Supply Single output IP20 Output current 5 A 3RX9 502-0BA00 new	AS-Interface Power Supply Single output IP20 Output current 8 A 3RX9 503-0BA00 new
Input data			
Primary voltage U_e in V	120/ 230 AC	120/ 230 AC	120/230 ... AC 500
Operating voltage range in V	85 ... AC 132 / 176 ... 253	85 ... AC 132 / 176 ... 253	85 ... AC 132 / 176 ... 550
Mains frequency range in Hz	47 ... 63	47 ... 63	47 ... 63
Mains buffering at $I_{a\ rated}$ in ms	> 20	> 20	> 20
Rated primary current in A	1.6 / 0.9	2.7 / 1.5	4.4 / 2.4
Back-up protection in the main supply line recommended (IEC 898) in A	6 Charateristic C	6 Charateristic C	10 Charateristic C
Output data			
Rated output voltage $U_{a\ rated30}$ in V	DC 30	DC 30	DC 30
Residual ripple / spikes	< 50 mVpp (10 ... 500 kHz) < 300 mVpp (0 ... 10 kHz)	< 50 mVpp (10 ... 500 kHz) < 300 mVpp (0 ... 10 kHz)	< 50 mVpp (10 ... 500 kHz) < 300 mVpp (0 ... 10 kHz)
Rated output current $I_{a\ rated}$ in A	3	5	8
Making-current limitation in A	typ. 3.5	typ. 5.5	typ. 8.5
Efficiency at full load in %	typ. 84	typ. 87	typ. 87
Ambient conditions			
Storage/transport temperature in °C	-25 ... +80	-25 ... +80	-25 ... +80
Ambient operating temperature in °C	-10 ... +70	-10 ... +70	-10 ... +70
Degree of protection	IP20	IP20	IP20
Degree of pollution	2	2	2
Humidity class	Climate class DIN 50010, relative air humidity max. 100 %, without condensation		
EMC emitted interference class B	IEC 61000-6-3	IEC 61000-6-3	IEC 61000-6-3
EMC interference immunity	EN 61000-6-2, EN 61000-4-2/-3/-4/-5/-6/-11		

■ **Selection and Ordering data**

	Version	Order No.
	AS-Interface Power Supply IP20 NEW • Single output IP20 • With integrated ground-fault detection	
	Output current *Input voltage*	
	3 A 115/230 V AC (switch-selectable)	**3RX9 501-0BA00**
	5 A 115/230 V AC (switch-selectable)	**3RX9 502-0BA00**
	8 A 115 / 230 ... 500 AC (switch-selectable)	**3RX9 503-0BA00**

3RX9 501-0BA00

3RX9 502-0BA00

3RX9 503-0BA00

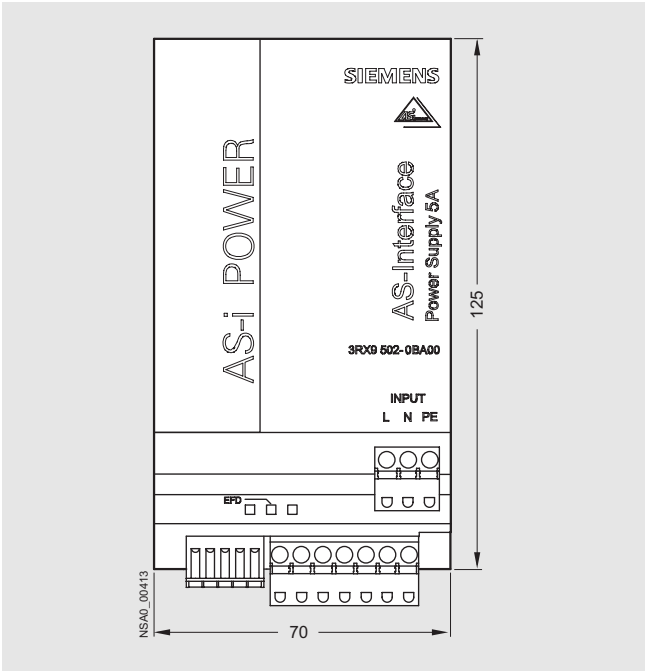Conversion table for previous devices: see Section *More Info*.

Note:
The previous devices 3RX9 305-1AA00,
3RX9 306-1AA00, 3RX9 307-0AA00, 3RX9 307-1AA00,
3RX9 310-0AA00 and 4FD5 213-0AA10-1A
are expected to be available until 12/2005.
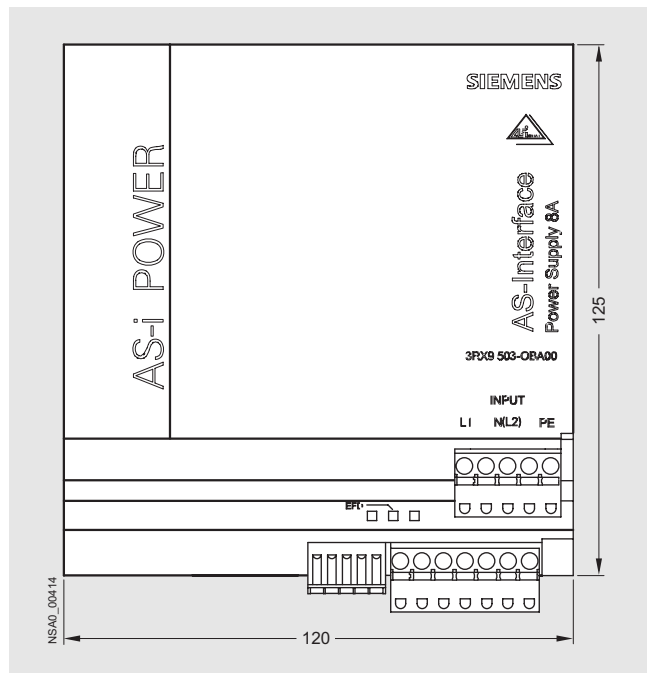
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■ **Dimension drawings**
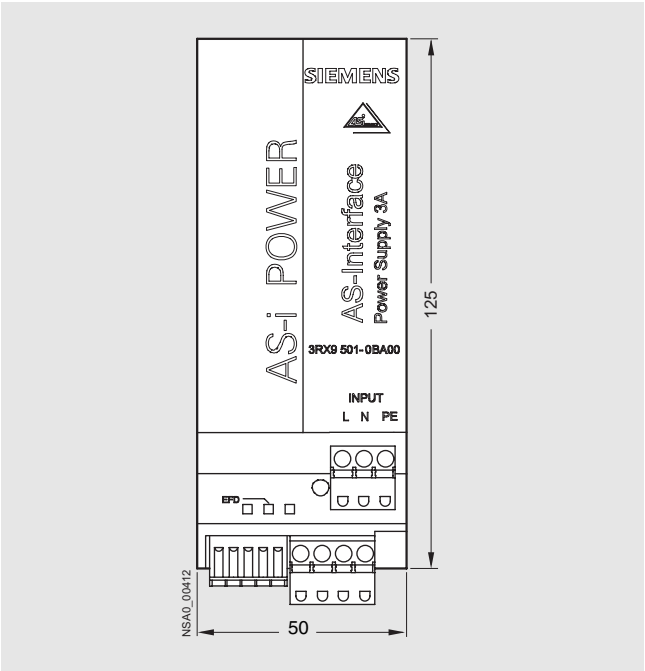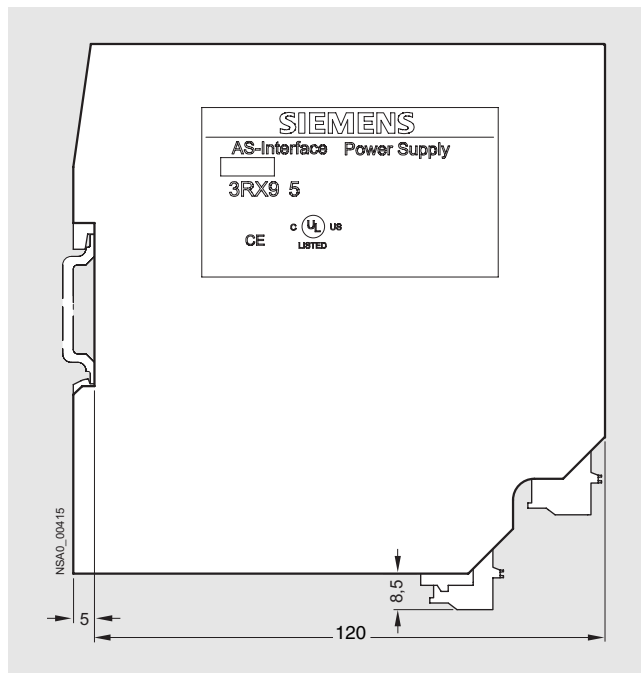

Front view 3RX9 501-0BA00

Front view 3RX9 502-0BA00

AS-Interface Power Supplies, IP20

■ **Dimension drawings** (continued)

Front view 3RX9 503-0BA00

Side view 3RX9 501-0BA00 / 3RX9 502-0BA00 / 3RX9 503-0BA00

■ **More information**

Conversion table

Previous type		New Type		
Order No.	Version	Number	Order No.	Version
3RX9 307-0AA00	Single output IP20 2.4 A	1	3RX9 501-0BA00	Single output IP20 with ground-fault detection 3 A
3RX9 310-0AA00	Single output IP20 with ground-fault detection 2.4 A	1	3RX9 501-0BA00	Single output IP20 with ground-fault detection 3 A
3RX9 307-1AA00	Single output IP20 4 A	1	3RX9 502-0BA00	Single output IP20 with ground-fault detection 5 A
6EP1 354-1AL01	Single output IP20 7 A	1	3RX9 503-0BA00	Single output IP20 with ground-fault detection 8 A
3RX9 305-1AA00	Dual output IP20 4 A / 4 A	2	3RX9 502-0BA00	Single output IP20 with ground-fault detection 5 A
3RX9 306-1AA00	Combi output IP20 4 A (Asi) / 5 A (24 V)	1	3RX9 502-0BA00	Single output IP20 with ground-fault detection 5 A
		1	6EP1 333-2AA01	SITOP 24 V IP20 5 A

ℹ Note:
The previous devices 3RX9 305-1AA00,
3RX9 306-1AA00, 3RX9 307-0AA00, 3RX9 307-1AA00,
3RX9 310-0AA00 und 4FD5 213-0AA10-1A
are expected to be available until 12/2005.