



SIRIUS safety relay Output expansion 3RO Power, with Relay enabling circuits 3 NO contacts plus Relay signaling circuit 1 NC contact  $U_s = 24 \text{ V DC}$  screw terminal

product brand name	SIRIUS
product category	Safety relays
product designation	Output expansion
design of the product	Relay enabling circuits
product type designation	3SK1
<b>Product Function</b>	
product function parameterizable	undelayed/delayed (only with system connector)
suitability for use	
• safety-related circuits	Yes
<b>General technical data</b>	
certificate of suitability UL approval	Yes
power loss [W] maximum	5.5 W
insulation voltage rated value	300 V
degree of pollution	3
overvoltage category	3
surge voltage resistance rated value	4 000 V
protection class IP of the enclosure	IP20
shock resistance	5 g / 10 ms
operating frequency maximum	360 1/h
mechanical service life (operating cycles) typical	10 000 000
thermal current of the switching element with contacts maximum	10 A
make time with automatic start	
• typical	50 ms
• at DC maximum	70 ms
• after power failure typical	50 ms
• after power failure maximum	70 ms
backslide delay time in the event of power failure	
• typical	20 ms
• maximum	20 ms
reference code according to IEC 81346-2	F
Substance Prohibitance (Date)	11/05/2012
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	4 000 m; Derating, see Product Notification 109792701
ambient temperature	
• during operation	-25 ... +60 °C
• during storage	-40 ... +80 °C
relative humidity during operation	10 ... 95 %
air pressure according to SN 31205	900 ... 1 060 hPa

<b>Electromagnetic compatibility</b>	
<b>installation environment regarding EMC</b>	This product is suitable for Class B environments and can also be used in domestic environments.
<b>EMC emitted interference</b>	IEC 60947-5-1, IEC 61000
<b>Safety related data</b>	
<b>stop category according to IEC 60204-1</b>	0
IEC 62061	
SIL Claim Limit (subsystem) according to EN 62061	3
PFHD with high demand rate according to IEC 62061	1E-9 1/h
ISO 13849	
category according to EN ISO 13849-1	4
<b>performance level (PL) according to ISO 13849-1</b>	e
IEC 61508	
<b>safety device type according to IEC 61508-2</b>	Type A
<b>Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508</b>	1E-6 1/y
<b>PFDavg with low demand rate according to IEC 61508</b>	1E-6
hardware fault tolerance according to IEC 61508	1
T1 value for proof test interval or service life according to IEC 61508	20 a
<b>Electrical Safety</b>	
<b>touch protection against electrical shock</b>	finger-safe
<b>Short-circuit protection</b>	
design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	gL/gG: 16 A or MCB type A: 6 A or MCB type B: 4 A or MCB type C: 4 A
<b>Inputs</b>	
<b>design of input</b>	
• feedback input	No
<b>Outputs</b>	
<b>number of outputs as contact-affected switching element</b>	
• as NC contact	
— for signaling function delayed switching	0
— safety-related instantaneous contact	0
— safety-related delayed switching	0
• as NO contact	
— for signaling function instantaneous contact	0
— for signaling function delayed switching	0
— safety-related instantaneous contact	3
— safety-related delayed switching	0
<b>number of outputs as contact-less semiconductor switching element</b>	
• for signaling function	
— delayed switching	0
<b>switching capacity current of the NO contacts of the relay outputs at DC-13</b>	
• at 24 V	6 A
• at 115 V	1.1 A
• at 230 V	0.55 A
<b>switching capacity current of the NO contacts of the relay outputs at AC-15</b>	
• at 24 V	10 A
• at 115 V	10 A
• at 230 V	10 A
<b>total current maximum</b>	30 A
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage at DC rated value</b>	
•	24 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>	
• initial value	0.8
• full-scale value	1.2
<b>recovery time after power failure typical</b>	0 s

Installation/ mounting/ dimensions	
mounting position	on horizontal standard DIN rail
fastening method	screw and snap-on mounting
height	100 mm
width	90 mm
depth	121.6 mm
required spacing	
• with side-by-side mounting at the side	0 mm
• for grounded parts at the side	5 mm

Connections/ Terminals	
type of electrical connection	screw terminal
type of connectable conductor cross-sections	
• solid	1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²)
• finely stranded with core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
• for AWG cables solid	1x (20 ... 12), 2x (20 ... 14)
type of electrical connection plug-in socket	No

Approvals Certificates	
General Product Approval	



[Confirmation](#)



EMV	Functional Safety	Test Certificates	Marine / Shipping
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[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)



Marine / Shipping	other	Railway	Environment
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[Confirmation](#)

[Confirmation](#)

[Environmental Confirmations](#)

Further information
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#### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

#### Information- and Downloadcenter (Catalogs, Brochures,...)

<https://www.siemens.com/ic10>

#### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3SK1213-1AB40>

#### Cax online generator

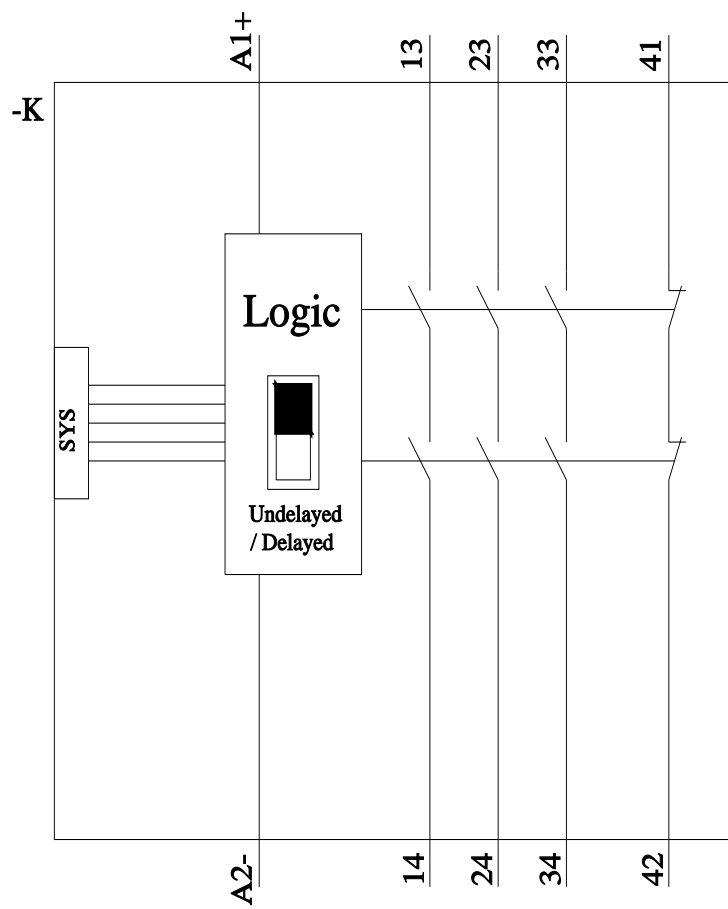
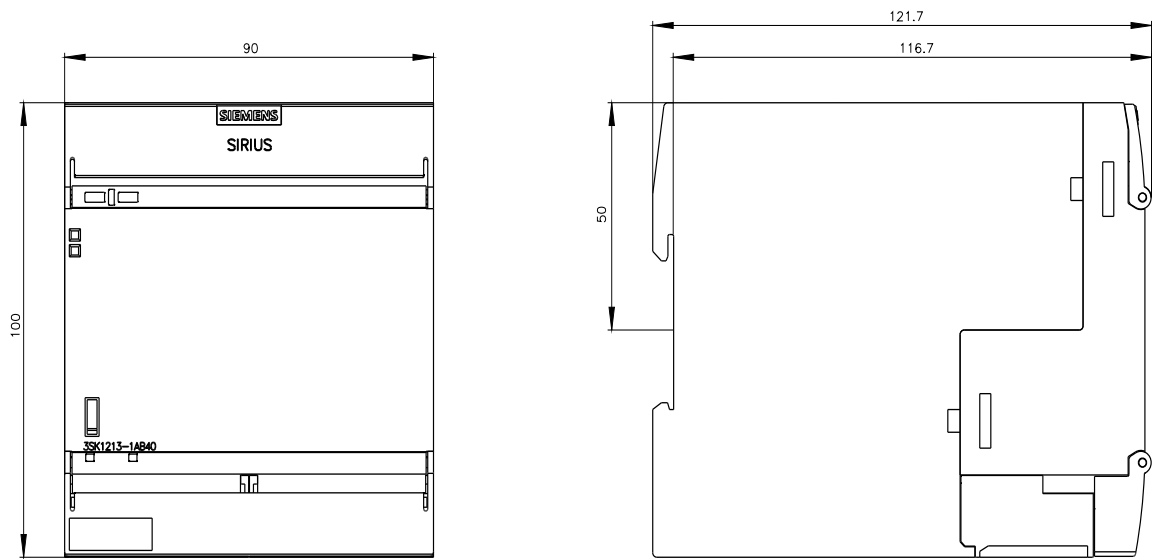
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1213-1AB40>

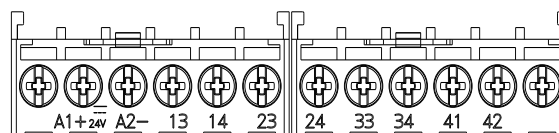
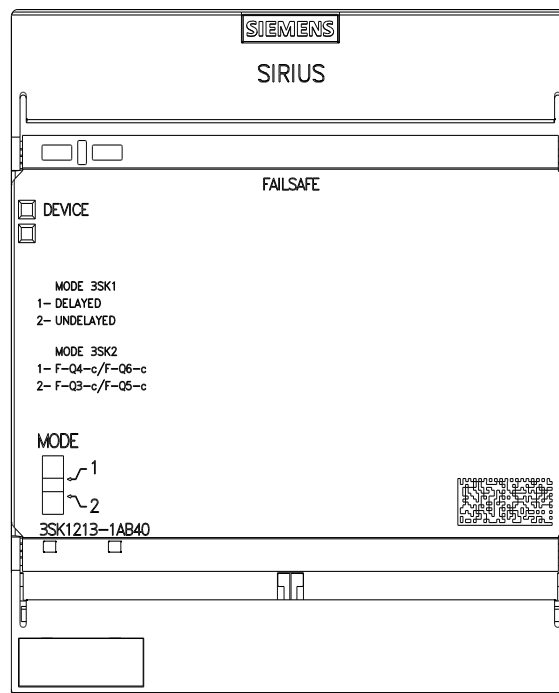
#### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3SK1213-1AB40>

#### Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3SK1213-1AB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1213-1AB40&lang=en)





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