SIEMENS

Data sheet 3SK1121-2CB41



SIRIUS safety relay Basic unit Advanced series with time delay 0.05-3 s Relay enabling circuits 2 NO instantaneous 2 NO delayed Us = 24 V DC Spring-type terminal (push-in)

General technical data		
product brand name	SIRIUS	
product category	Safety relays	
product designation	safety relays	
design of the product	Relay enabling circuits	
protection class IP of the enclosure	IP20	
touch protection against electrical shock	finger-safe	
insulation voltage rated value	300 V	
ambient temperature		
 during storage 	-40 +80 °C	
during operation	-25 +60 °C	
air pressure acc. to SN 31205	900 1 060 hPa	
relative humidity during operation	10 95 %	
installation altitude at height above sea level maximum	2 000 m	
vibration resistance acc. to IEC 60068-2-6	5 500 Hz: 0.75 mm	
shock resistance	10g / 11 ms	
surge voltage resistance rated value	4 000 V	
EMC emitted interference	IEC 60947-5-1, Class A	
installation environment regarding EMC	This product is suitable for Class A environments only. It can cause undesired radio-frequency interference in residential environments. If this is the case, the user must take appropriate measures.	
overvoltage category	3	
degree of pollution	3	
reference code acc. to IEC 81346-2	F	
power loss [W] maximum	2.5 W	
number of sensor inputs 1-channel or 2-channel	1	
design of the cascading	yes	
type of the safety-related wiring of the inputs	single-channel and two-channel	
product feature cross-circuit-proof	Yes	
Safety Integrity Level (SIL)		
• acc. to IEC 61508	3	
• for delayed release circuit acc. to IEC 61508	SIL3	
performance level (PL)		
• acc. to EN ISO 13849-1	е	
• for delayed release circuit acc. to EN ISO 13849-1	е	
category acc. to EN ISO 13849-1	4	
Safe failure fraction (SFF)	99 %	
PFHD with high demand rate acc. to EN 62061	0.000000037 1/h	
PFDavg with low demand rate acc. to IEC 61508	0.000007	

IEC 61586 Safety davice type acc. to IEC 61588 1 Safety davice type acc. to IEC 61588 1 Type B Safety davice type acc. to IEC 61588 2 Type B Safety davice type acc. to IEC 61588 2 Type B Safety davice type acc. to IEC 61588 2 Type B Safety davice type acc. to IDN EN 62084-1 0 / 1 Safety related fellared selections with the content of the safety circuits typical with monitored start safety over time after power failure sypical of the safety circuits typical safety over the safety over the of the safety circuits typical safety over the control supply voltage safety over the safety over	The value for many fact intermed and 1 100	20
safety device by sea. to IEC 61598.2 number of outputs as contact-affected switching element a sNO Contact	T1 value for proof test interval or service life acc. to IEC 61508	20 y
safety device type acc, to IEC e1588-2 mumber of outputs as contact-affected switching element. • so No centact - safety-related instantaneous contact - safety-related instantaneous contact - safety-related delayed switching 2 stop aetegory acc. to INI RE 80284-1 07.1 ***Centeral technical data design of input • cascading input/functional switching 4 east input • cascading input/functional switching 5 eechaged, input • start input 7 yes • start input 7 yes • start input 8 yes • start input 9 yes •		1
mumber of outputs as contact-affected switching element		
safety-related delayed switching stop category acc. to DIN EN 60204-1 General technical data design of input cascading inputfunctional switching seems of input start input	as NO contact	
Stop category acc. to DIN EN 50204-1	 — safety-related instantaneous contact 	2
General technical data design of input	 — safety-related delayed switching 	2
design of Input	stop category acc. to DIN EN 60204-1	0/1
• cascading input/functional switching • feetback input • start input • start input • system • system • system • of the NO contacts of the relay outputs • at 115 V •	General technical data	
Feedback input	design of input	
start input type of electrical connection plug-in socket type of electrical connection plug-in socket switching capacity current	 cascading input/functional switching 	Yes
type of electrical connection plug-in socket operating frequency maximum of the NO contacts of the relay outputs —at 224 V —at 115 V —at 230 V —at 115 V —at 230 V 3 A thermal current of the switching element with contacts maximum operational current at 17 V minimum total current maximum operational service life (switching cycles) typical design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required wire length • with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum altitum with automatic start • typical backslide delay time after opening of the safety circuits recovery time after opening of the safety circuits plused uration • of the Sensor input minimum • of the Contact input minimum • of the Contact of the relay outputs required wire length • with Cu 1.5 mm² and 150 nF/km per sensor circuit • typical • typical backslide delay time after opening of the safety circuits plycial of the Contact of the relay outputs required • typical • maximum adjustable OFF-delay time after opening of the safety circuits typical • of the Sensor input minimum • of the	 feedback input 	Yes
operation of the switching expactly current • of the NO contacts of the relay outputs — at DC-13 — at 24 V — at 115 V — at 230 V — at 250 V —	start input	Yes
switching capacity current • of the NO contacts of the relay outputs — at 24 V — at 115 V — at 230 V — at 125 V — at 230 V thermal current of the switching element with contacts maximum operational current at 17 V minimum total current maximum operational current at 17 V minimum total current maximum operational current at 17 V minimum total current maximum operational current at 17 V minimum total current maximum operational current at 17 V minimum total current maximum poperational current at 17 V minimum total current maximum poperational current at 17 V minimum total current maximum 12 A mechanical service life (switching cycles) typical design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required wire length • with Cu 1.5 mm² and 150 nF/km per sensor circuit make time with automatic start • at DC maximum 110 ms 4 000 m	type of electrical connection plug-in socket	No
of the NO contacts of the relay outputs — at 124 V — at 24 V — at 115 V — at 230 V — at 115 V — at 230 V — at 115 V — at 230 V — at 230 V — at 230 V — at 115 V — at 230 V — at 230 V — at 15 V — at 230 V — at 250 V — at 250 V — at 27 V — at 28 V — at 27 V — at 28 V — at 28 V — at 29 V — at 29 V — at 29 V — at 29 V	operating frequency maximum	360 1/h
- at DC-13	switching capacity current	
- at 24 V - at 115 V - at 230 V - at AC-15 - at 230 V - at AC-15 - at 230 V - at 250 V -	 of the NO contacts of the relay outputs 	
- at 115 V		
- at 230 V - at AC-15 - at 115 V - at 230 V 3 A thermal current of the switching element with contacts maximum operational current at 17 V minimum total current maximum operational current at 17 V minimum total current maximum operational current at 17 V minimum total current maximum operational current at 17 V minimum total current maximum operational current at 17 V minimum total current maximum design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required wire length • with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum make time with automatic start • 10 C maximum make time with automatic start after power failure • typical • maximum make time with monitored start • maximum make time with monitored start • maximum for 500 ms adjustable OFF-delay time after opening of the safety circuits typical omaximum adjustable OFF-delay time after opening of the safety circuits recovery time after opening of the safety circuits typical • of the sensor input minimum • of the oN pushbutton input	— at 24 V	
- at AC-15 - at 116 V - at 230 V thermal current of the switching element with contacts maximum operational current at 17 V minimum total current anaximum mechanical service life (switching cycles) typical design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required wire length • with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum make time with automatic start • at DC maximum make time with automatic start after power failure • typical • maximum make time with monitored start • maximum make time with monitored start • recovery time after opening of the safety circuits • maximum adjustable OFF-delay time after opening of the safety circuits • of the ON pushbutton input minimum • of the sensor input minimum • of the on pushbutton input mi		
thermal current of the switching element with contacts maximum operational current at 17 V minimum total current maximum mechanical service life (switching cycles) typical design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required wire length with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum make time with automatic start at DC maximum make time with automatic start after power failure typical maximum backsilide delay time after opening of the safety circuits pulse duration adjustable OFF-delay time after opening of the safety circuits typical adjustable OFF-delay time after opening of the safety circuits typical of the sensor input minimum of the control circuit/ Control type of voltage of the control supply voltage control supply voltage at DC — rated value 3 A 3 A 3 A 3 A 3 A 3 A 3 A 3		0.1 A
The main current of the switching element with contacts maximum operational current at 17 V minimum total current maximum mechanical service life (switching cycles) typical design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required wire length • with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum make time with automatic start • at DC maximum make time with automatic start after power failure • typical • maximum backslide delay time after opening of the safety circuits typical • maximum recovery time after opening of the safety circuits recovery time after o		
thermal current of the switching element with contacts maximum operational current at 17 V minimum total current maximum mechanical service life (switching cycles) typical design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required wire length e with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum make time with automatic start e at DC maximum 110 ms make time with automatic start after power failure e typical e maximum backslide delay time after opening of the safety circuits typical backslide delay time in the event of power failure e typical e maximum backslide delay time after opening of the safety circuits typical backslide DFF-delay time after opening of the safety circuits typical recovery time after opening of the safety circuits typical pulse duration e of the sensor input minimum of the oN O rotage of the control supply voltage at DC — rated value 5 A 4 000 m alugig: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or oricuit breaker type C: 1A 4 000 m alugig: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or oricuit breaker type C: 1A 4 000 m alugig: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or oricuit breaker type C: 1A 4 000 m alugig: 6A or circuit breaker type C: 1A 4 000 m alugig: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or oricuit breaker type B: 2A or oricuit breaker type C: 1A 4 000 m alugic: 6A or circuit breaker type C: 1A 4 000 m alugic: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or oricuit breaker type B: 2	— at 115 V	3 A
operational current at 17 V minimum		
total current maximum mechanical service life (switching cycles) typical design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required wire length with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum make time with automatic start • at DC maximum make time with automatic start after power failure • typical • maximum make time with monitored start • maximum make time with monitored start • maximum 110 ms make time after opening of the safety circuits typical • maximum • typical • maximum backslide delay time after opening of the safety circuits typical • maximum • typical • maximum 110 ms backslide delay time in the event of power failure • typical • maximum • of the Sensor input maximum • of the sensor input minimum • of the sonsor input minimum • of the ON pushbutton input minimum • of the Control supply voltage • at DC — rated value 12 A 10 000 000 4 000 m 6 550 ms 6 550 ms 6 500 ms 9 0 ms 9		5 A
mechanical service life (switching cycles) typical design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required wire length • with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum make time with automatic start • at DC maximum make time with automatic start after power failure • lypical • maximum backslide delay time after opening of the safety circuits typical • maximum • typical • maximum backslide delay time in the event of power failure • lypical • maximum • typical • maximum • adjustable OFF-delay time after opening of the safety circuits typical backslide often typical • maximum • adjustable often opening of the safety circuits typical • of the Sensor input minimum • of the Sensor input minimum • of the Sensor input minimum • of the ON pushbutton supply voltage control supply voltage • at DC — rated value	operational current at 17 V minimum	5 mA
design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required gL/gG: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or circuit breaker type C: 1A	total current maximum	12 A
the NO contacts of the relay outputs required wire length • with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum make time with automatic start • at DC maximum make time with automatic start after power failure • typical • maximum shacks line with monitored start • maximum 110 ms make time with monitored start • maximum shackslide delay time after opening of the safety circuits typical • maximum • typical • maximum • typical • maximum • typical • maximum • of the Sensor input minimum • of the Sensor input minimum • of the Sensor input minimum • of the ON pushbutton input minimum • of the ontrol supply voltage • at DC — rated value	mechanical service life (switching cycles) typical	10 000 000
wire length with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum make time with automatic start at DC maximum 110 ms make time with automatic start after power failure bypical maximum 110 ms 6 500 ms 6 500 ms 6 500 ms maximum 110 ms make time with monitored start maximum 110 ms backslide delay time after opening of the safety circuits typical maximum backslide delay time in the event of power failure bypical maximum 100 ms 110 ms		
with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum make time with automatic start • at DC maximum make time with automatic start after power failure • typical • maximum make time with monitored start • maximum 110 ms backslide delay time after opening of the safety circuits typical • typical • typical • typical • typical • typical • maximum 110 ms backslide delay time in the event of power failure • typical • typical • maximum adjustable OFF-delay time after opening of the safety circuits recovery time after opening of the safety circuits typical recovery time after opening of the safety circuits typical of the sensor input minimum • of the sensor input minimum • of the Son pushbutton input minimum • of the ON pushbutton input minimum • of the ON pushbutton input minimum • of the ON pushbutton input minimum • of the Son to Son Son Son Son Son Son Son Son Son So		circuit breaker type C: 1A
make time with automatic start • at DC maximum make time with automatic start after power failure • typical • maximum make time with monitored start • maximum make time with monitored start • maximum backslide delay time after opening of the safety circuits typical backslide delay time in the event of power failure • typical • maximum adjustable OFF-delay time after opening of the safety circuits recovery time after opening of the safety circuits typical pulse duration • of the sensor input minimum • of the Sonsor input minimum • of the ON pushbutton input minimum • of the ON pushbutton input minimum • of the ON pushbutton input minimum • of the ON control supply voltage • at DC — rated value	_	4 000 m
make time with automatic start after power failure • typical • maximum make time with monitored start • maximum backslide delay time after opening of the safety circuits typical • maximum • typical • typical • typical • typical • maximum 40 ms adjustable OFF-delay time after opening of the safety circuits recovery time after power failure typical • of the sensor input minimum • of the sensor input minimum • of the SON pushbutton input minimum 75 ms • of the ON pushbutton input minimum 75 ms • of the Control supply voltage • at DC — rated value 24 V	·	4 000 III
make time with automatic start after power failure • typical • maximum 6 500 ms make time with monitored start • maximum backslide delay time after opening of the safety circuits typical backslide delay time in the event of power failure • typical • maximum 40 ms adjustable OFF-delay time after opening of the safety circuits recovery time after opening of the safety circuits recovery time after opening of the safety circuits recovery time after opening of the safety circuits typical recovery time after power failure typical • of the sensor input minimum • of the SoN pushbutton input minimum • of the ON pushbutton input minimum • of the ON pushbutton supply voltage • at DC — rated value 24 V	make time with automatic start	
• typical • maximum 6 500 ms make time with monitored start • maximum 110 ms backslide delay time after opening of the safety circuits typical backslide delay time in the event of power failure • typical • maximum 40 ms adjustable OFF-delay time after opening of the safety circuits recovery time after opening of the safety circuits typical recovery time after opening of the safety circuits typical recovery time after power failure typical • of the sensor input minimum • of the sensor input minimum • of the ON pushbutton input minimum • of the ON pushbutton input minimum • of the CON recovery time after opening of the control supply voltage • at DC — rated value 6 500 ms 40 ms 40 ms 30 ms 80 ms 80 ms 80 ms 90	at DC maximum	110 ms
maximum 6 500 ms make time with monitored start	make time with automatic start after power failure	
make time with monitored start • maximum backslide delay time after opening of the safety circuits typical backslide delay time in the event of power failure • typical • maximum • maximum • maximum adjustable OFF-delay time after opening of the safety circuits circuits recovery time after opening of the safety circuits typical recovery time after power failure typical recovery time after power failure typical • of the sensor input minimum • of the ON pushbutton input minimum • of the ON pushbutton input minimum • of the ON pushbutton input minimum • of the control circuit/ Control type of voltage of the control supply voltage • at DC — rated value 110 ms 40 ms 40 ms 0.05 3 control circuits 30 ms 100 ms		6 500 ms
maximum backslide delay time after opening of the safety circuits typical backslide delay time in the event of power failure • typical • maximum	• maximum	6 500 ms
backslide delay time after opening of the safety circuits typical backslide delay time in the event of power failure • typical • maximum adjustable OFF-delay time after opening of the safety circuits recovery time after opening of the safety circuits typical recovery time after power failure typical of the sensor input minimum of the ON pushbutton input minimum of the ON pushbutton input minimum type of voltage of the control supply voltage at DC — rated value 40 ms 30 ms 0.05 3 0.05	make time with monitored start	
circuits typical backslide delay time in the event of power failure • typical • maximum 40 ms adjustable OFF-delay time after opening of the safety circuits recovery time after opening of the safety circuits typical recovery time after power failure typical 6.5 s pulse duration • of the sensor input minimum • of the ON pushbutton input minimum 0.15 s Control circuit/ Control type of voltage of the control supply voltage • at DC — rated value 24 V	• maximum	110 ms
backslide delay time in the event of power failure • typical • maximum adjustable OFF-delay time after opening of the safety circuits recovery time after opening of the safety circuits typical recovery time after power failure typical for the sensor input minimum • of the sensor input minimum • of the ON pushbutton input minimum • of the ON pushbutton input minimum • of the control circuit/ Control type of voltage of the control supply voltage • at DC — rated value 24 V		40 ms
 typical maximum 40 ms adjustable OFF-delay time after opening of the safety circuits recovery time after opening of the safety circuits typical recovery time after power failure typical of the sensor input minimum of the ON pushbutton input minimum of the ON pushbutton input minimum type of voltage of the control supply voltage at DC retable V recovery time after opening of the safety circuits 30 ms 25 ms 0.5 s 		
maximum 40 ms adjustable OFF-delay time after opening of the safety circuits recovery time after opening of the safety circuits typical recovery time after power failure typical recovery time after power failure typical of the sensor input minimum of the Sensor input minimum of the ON pushbutton input minimum on the ON pushbutton input minimum type of voltage of the control supply voltage oat DC — rated value 24 V		
adjustable OFF-delay time after opening of the safety circuits recovery time after opening of the safety circuits typical recovery time after power failure typical recovery time after power failure typical of the sensor input minimum of the ON pushbutton input minimum 0.15 s Control circuit/ Control type of voltage of the control supply voltage of the DC - rated value 0.05 3 0.0	• •	
recovery time after opening of the safety circuits typical recovery time after power failure typical recovery time after power failure typical of the sensor input minimum of the ON pushbutton input minimum of the ON pushbutton input minimum type of voltage of the control supply voltage oat DC rated value 24 V		
recovery time after power failure typical pulse duration of the sensor input minimum of the ON pushbutton input minimum type of voltage of the control supply voltage control supply voltage o at DC rated value 6.5 s 0.15 s DC Control circuit/ Control DC 24 V		0.05 3
pulse duration of the sensor input minimum		30 ms
of the sensor input minimum of the ON pushbutton input minimum 0.15 s Control circuit/ Control type of voltage of the control supply voltage control supply voltage at DC — rated value 24 V	recovery time after power failure typical	6.5 s
of the ON pushbutton input minimum 0.15 s Control circuit/ Control type of voltage of the control supply voltage control supply voltage at DC — rated value 24 V	pulse duration	
type of voltage of the control supply voltage control supply voltage at DC rated value DC 24 V	·	75 ms
type of voltage of the control supply voltage control supply voltage at DC rated value DC 24 V		0.15 s
control supply voltage	Control circuit/ Control	
◆ at DC — rated value 24 V	type of voltage of the control supply voltage	DC
— rated value 24 V	control supply voltage	
	• at DC	
operating range factor control supply voltage rated	— rated value	24 V
-L	operating range factor control supply voltage rated	

value of magnet coil				
• at DC	0.8 1.2			
Installation/ mounting/ dimensions				
mounting position	any			
required spacing for grounded parts at the side	5 mm			
fastening method	screw and snap-on mountin	g		
width	22.5 mm			
height	100 mm			
depth	121.6 mm			
Connections/ Terminals				
type of electrical connection	Push-in terminal			
type of connectable conductor cross-sections				
• solid	1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)			
 finely stranded 				
 — with core end processing 	1x (0.5 1.0 mm²), 2x (0.5 1.0 mm²)			
without core end processing	1x (0.5 1.5 mm²), 2x (0.5 1.5 mm²)			
type of connectable conductor cross-sections at AWG cables				
• solid	1x (20 16), 2x (20 16)			
• stranded	1x (20 16), 2x (20 16)			
Product Function				
product function parameterizable	Sensor floating / sensor non-floating, monitored start / autostart, 1-channel / 2-channel sensor connection, cross-circuit detection, startup testing, antivalent sensors, 2-hand switches, time delay			
suitability for operation device connector 3ZY12	Yes			
suitability for interaction press control	Yes			
suitability for use				
safety switch	Yes			
 monitoring of floating sensors 	Yes			
 monitoring of non-floating sensors 	Yes			
 magnetically operated switch monitoring 	Yes			
 safety-related circuits 	Yes			
Certificates/ approvals				
General Product Approval		EMC	Functional Safety/Safety of Machinery	











Type Examination Certificate

Declaration of Conformity

Test Certificates

Marine / Shipping



Type Test Certificates/Test Report









other Railway

Confirmation Confirmation

Further information

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=3SK1121-2CB41

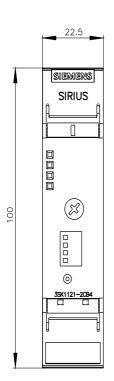
Cax online generator

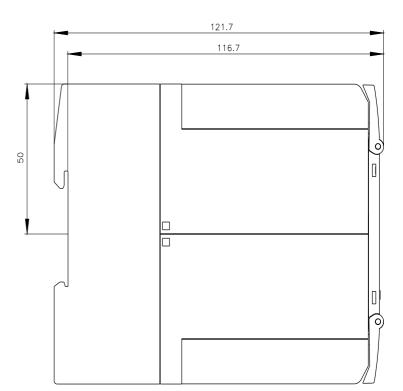
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1121-2CB41

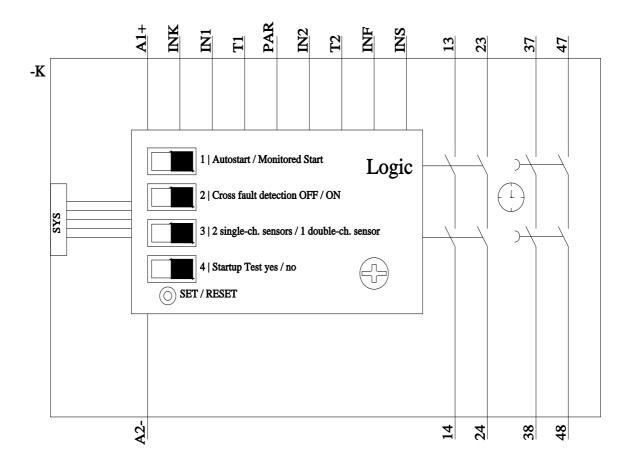
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

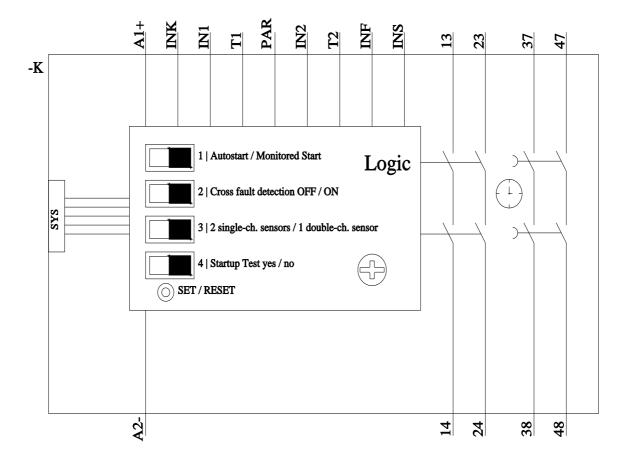
https://support.industry.siemens.com/cs/ww/en/ps/3SK1121-2CB41

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1121-2CB41&lang=en









last modified: 12/23/2020 🖸