## **SIEMENS**

Data sheet 3RP15 31-1AP30



Timing relay, electronic Phase-out product! For further information, contact our sales department with OFF delay 1 CO contact, with aux. voltage 1 time range 0.5 s...10 s 24, 200...240 V AC and 24 V DC at 50/60 Hz AC with LED, screw terminal

General technical data:		
product brandname		SIRIUS
Product designation		timing relay
Mounting position		any
Product function non-volatile		No
Product component		
Relay output		Yes
• semi-conductor output		No
Installation altitude at height above sea level	m	2 000
maximum		
Ambient temperature		
<ul><li>during operation</li></ul>	°C	-25 <b>+</b> 60
during storage	°C	-40 <b>+</b> 85
during transport	°C	-40 <b>+</b> 85
Relative humidity during operation	%	10 95
EMC emitted interference acc. to IEC 61812-1		EN 61000-6-4(3)
EMI immunity acc. to IEC 61812-1		EN 61000-6-2
Conducted interference due to burst acc. to IEC 61000-4-4		2 kV network connection / 1 kV control connection

acc. to IEC 61000-4-5  Electrostatic discharge acc. to IEC 61000-4-2  Electrostatic discharge acc. to IEC 61000-4-2  Field-bound parasitic coupling acc. to IEC 61000-4-3  Surge voltage resistance rated value  V 4 000  Power loss [W] total typical  eac. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750  acc. to DIN EN 61346-2  acc. to DIN EN 81346-2  frotection against electrical shock  Protection against electrical shock  Protection against electrical shock  Protection alsas IP  Type of insulation  Mechanical service life (switching cycles) typical  Electrical endurance (switching cycles) at AC-15 at 230 V typical  Shock resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-7  Relative repeat accuracy  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 60068 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension optional remote control  Product extension optional remote control  No	Conducted interference due to conductor-earth surge		2 kV
Surge acc. to IEC 61000-4-5  Electrostatic discharge acc. to IEC 61000-4-2 Field-bound parasitic coupling acc. to IEC 61000-4-3 Surge voltage resistance rated value V 4 000 Power loss [W] total typical Equipment marking  acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750 acc. to DIN EN 61346-2 cac. to DIN EN 81346-2 Category acc. to EN 954-1 Protection against electrical shock Protection against electrical shock Protection against electrical shock Protection against electrical shock Electrical endurance (switching cycles) typical Electrical endurance acc. to IEC 60068-2-6 Shock resistance acc. to IEC 60068-2-7 Relative repeat accuracy Recovery time ms 150 Minimum ON period Degree of pollution Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value Relative setting accuracy relating to full-scale value Product extension required remote control  A k kV contact discharge / 8 kV air discharge / 8 kV	acc. to IEC 61000-4-5		4137
Electrostatic discharge acc. to IEC 61000-4-2 Field-bound parasitic coupling acc. to IEC 61000-4-3 Surge voltage resistance rated value V 4 000 Power loss [W] total typical  eacc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750 eacc. to DIN EN 61346-2 eacc. to DIN EN 81346-2 Frotection against electrical shock Protection class IP Frotection class IP Type of insulation Mechanical service life (switching cycles) typical Electrical endurance (switching cycles) at AC-15 at 230 V typical Operating frequency with 3RT2 contactor maximum Vibration resistance acc. to IEC 60068-2-6 Shock resistance acc. to IEC 60068-2-7 Relative repeat accuracy Recovery time Minimum ON period Degree of pollution Relative setting accuracy relating to full-scale value Relative setting accuracy relating to full-scale value Product extension required remote control  4 k V contact discharge / 8 kV air discharge 10 V/m 4 000 4 kV 4 000  4 000  K  K  K  K  K  K  K  K  Category acc. to EIC 610064-2  K  K  EAC  EAC  EAC  EAC  EAC  EAC  EA			1 KV
Field-bound parasitic coupling acc. to IEC 61000-4-3  Surge voltage resistance rated value  V 4 000  Power loss [W] total typical  Equipment marking  • acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750  • acc. to DIN EN 61346-2  • acc. to DIN EN 81346-2  • acc. to DIN EN 81346-2  Frotection against electrical shock  Protection class IP  Type of insulation  Mechanical service life (switching cycles) typical  Electrical endurance (switching cycles) at AC-15 at 230 V typical  Operating frequency with 3RT2 contactor maximum  Vibration resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-7  Relative repeat accuracy  Minimum ON period  Degree of pollution  Relative setting accuracy relating to full-scale value  Relative setting accuracy relating to full-scale value  Relative setting accuracy relating to full-scale value  Product extension required remote control	_		4 kV contact discharge / 9 kV oir discharge
Surge voltage resistance rated value  Power loss [W] total typical  Equipment marking  • acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750  • acc. to DIN EN 61346-2  • acc. to DIN EN 81346-2  Category acc. to EN 954-1  Protection against electrical shock  Protection against electrical shock  Protection elist (switching cycles) typical  Electrical endurance (switching cycles) at AC-15 at 230 V typical  Operating frequency with 3RT2 contactor maximum  Vibration resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-7  Relative repeat accuracy  Recovery time  Minimum ON period  Degree of pollution  Relative setting accuracy relating to full-scale value  Relative setting accuracy relating to full-scale value  Product extension required remote control  V 4 000  K  K  K  K  K  K  K  K  K   Category  K  K   C  K   K   C  K   C  K   C  K   C  K   C  K   C  C	<u> </u>		
Power loss [W] total typical  Equipment marking  • acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750  • acc. to DIN EN 61346-2  • acc. to DIN EN 81346-2  • acc. to DIN EN 81346-2  K  Category acc. to EN 954-1  Protection against electrical shock  Protection class IP  Type of insulation  Mechanical service life (switching cycles) typical  Electrical endurance (switching cycles) at AC-15 at 230 V typical  Operating frequency with 3RT2 contactor maximum  Vibration resistance acc. to IEC 60068-2-27  Relative repeat accuracy  Recovery time  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 600684 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  W   K  K  K  K  K  K  K  K  K  K   K	· · ·	,	
Equipment marking  acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750  acc. to DIN EN 61346-2  acc. to DIN EN 61346-2  acc. to DIN EN 81346-2  for acc. to DIN EN 81346-2  category acc. to EN 954-1  Protection against electrical shock  Protection against electrical shock  Protection class IP  Type of insulation  Mechanical service life (switching cycles) typical  Electrical endurance (switching cycles) at AC-15 at 230 V typical  Operating frequency with 3RT2 contactor maximum  Vibration resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-7  Relative repeat accuracy  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  K  K  K  K  K  K  K  K  K  K  K  K  K			
acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750  acc. to DIN EN 61346-2  acc. to DIN EN 61346-2  acc. to DIN EN 81346-2  K  Category acc. to EN 954-1  Protection against electrical shock  Protection class IP  Type of insulation  Mechanical service life (switching cycles) typical  Electrical endurance (switching cycles) at AC-15 at 230 V typical  Operating frequency with 3RT2 contactor maximum  Vibration resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-7  Relative repeat accuracy  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  K  K  K  K  K  K  K  K  K  K  K  K  K	<u> </u>	W	2
204-2 acc. to IEC 750  • acc. to DIN EN 61346-2  • acc. to DIN EN 81346-2  • acc. to DIN EN 81346-2  K  Category acc. to EN 954-1  Protection against electrical shock  Frotection class IP  Type of insulation  Mechanical service life (switching cycles) typical  Electrical endurance (switching cycles) at AC-15 at 230 V typical  Operating frequency with 3RT2 contactor maximum  Vibration resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-7  Relative repeat accuracy  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  K  K  K  K  K  K  K  K  K  K  K  K  K	Equipment marking		
acc. to DIN EN 61346-2  acc. to DIN EN 81346-2  Category acc. to EN 954-1  Protection against electrical shock  Protection class IP  Type of insulation  Mechanical service life (switching cycles) typical  Electrical endurance (switching cycles) at AC-15 at 230 V typical  Operating frequency with 3RT2 contactor maximum  Vibration resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-7  Relative repeat accuracy  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  K  K  K  K  K  K  K  K  K  K  K  K  K	<ul> <li>acc. to DIN 40719 extended according to IEC</li> </ul>		K
cac. to DIN EN 81346-2 Category acc. to EN 954-1 Protection against electrical shock Protection class IP Type of insulation Mechanical service life (switching cycles) typical Electrical endurance (switching cycles) at AC-15 at 230 V typical Operating frequency with 3RT2 contactor maximum Vibration resistance acc. to IEC 60068-2-6 Shock resistance acc. to IEC 60068-2-7 Relative repeat accuracy Recovery time ms 150 Minimum ON period Degree of pollution Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value Relative setting accuracy relating to full-scale value Product extension required remote control  K Insulation voltage for overvoltage to full-scale value Product extension required remote control  K Insulation voltage for overvoltage to full-scale value Product extension required remote control  K Insulation voltage for overvoltage to full-scale value Product extension required remote control	204-2 acc. to IEC 750		
Category acc. to EN 954-1 Protection against electrical shock Protection class IP Type of insulation Mechanical service life (switching cycles) typical Electrical endurance (switching cycles) at AC-15 at 230 V typical Operating frequency with 3RT2 contactor maximum Vibration resistance acc. to IEC 60068-2-6 Shock resistance acc. to IEC 60068-2-7 Relative repeat accuracy Recovery time ms 150 Minimum ON period Degree of pollution Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value Relative setting accuracy relating to full-scale value Product extension required remote control  No	● acc. to DIN EN 61346-2		K
Protection against electrical shock Protection class IP Type of insulation Mechanical service life (switching cycles) typical Electrical endurance (switching cycles) at AC-15 at 230 V typical Operating frequency with 3RT2 contactor maximum Vibration resistance acc. to IEC 60068-2-6 Shock resistance acc. to IEC 60068-2-7 Relative repeat accuracy Recovery time ms 150 Minimum ON period Degree of pollution Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value Relative setting accuracy relating to full-scale value Product extension required remote control  Insulation required remote control  Insulation required remote control  Insulation required remote control	• acc. to DIN EN 81346-2		К
Protection class IP  Type of insulation  Mechanical service life (switching cycles) typical  Electrical endurance (switching cycles) at AC-15 at 230 V typical  Operating frequency with 3RT2 contactor maximum  Vibration resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-7  Relative repeat accuracy  Recovery time  ms  150  Minimum ON period  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control	Category acc. to EN 954-1		none
Type of insulation  Mechanical service life (switching cycles) typical  Electrical endurance (switching cycles) at AC-15 at 230 V typical  Operating frequency with 3RT2 contactor maximum  Vibration resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-7  Relative repeat accuracy  Recovery time  ms  150  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  Basic insulation  10 000 000  100	Protection against electrical shock		finger-safe
Mechanical service life (switching cycles) typical  Electrical endurance (switching cycles) at AC-15 at 230 V typical  Operating frequency with 3RT2 contactor maximum  Vibration resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-7  Relative repeat accuracy  Recovery time  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  100 000	Protection class IP		IP20
Electrical endurance (switching cycles) at AC-15 at 230 V typical  Operating frequency with 3RT2 contactor maximum  1/h  5 000  Vibration resistance acc. to IEC 60068-2-6  10 55 Hz / 0.35 mm  Shock resistance acc. to IEC 60068-2-27  Relative repeat accuracy  %  1  Recovery time  ms  150  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  No	Type of insulation		Basic insulation
Operating frequency with 3RT2 contactor maximum  Vibration resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-27  Relative repeat accuracy  Recovery time  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  1/h 5 000  10 55 Hz / 0.35 mm  11g / 15 ms  11g / 15 ms  150  ms 35  35  300  300  5  No	Mechanical service life (switching cycles) typical		10 000 000
Vibration resistance acc. to IEC 60068-2-6  Shock resistance acc. to IEC 60068-2-27  Relative repeat accuracy  %  1  Recovery time  ms  150  Minimum ON period  ms  35  Degree of pollution  Insulation voltage for overvoltage category III  according to IEC 60664 with degree of pollution 3  rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  No	, , , ,		100 000
Shock resistance acc. to IEC 60068-2-27  Relative repeat accuracy  % 1  Recovery time  ms 150  Minimum ON period  Degree of pollution  Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  11g / 15 ms  150  150  35  35  V 300  55  Product extension required remote control	Operating frequency with 3RT2 contactor maximum	1/h	5 000
Relative repeat accuracy	Vibration resistance acc. to IEC 60068-2-6		10 55 Hz / 0.35 mm
Recovery time ms 150  Minimum ON period ms 35  Degree of pollution 3  Insulation voltage for overvoltage category III voltage to IEC 60664 with degree of pollution 3  rated value 7  Relative setting accuracy relating to full-scale value 7  Product extension required remote control 7  Mo	Shock resistance acc. to IEC 60068-2-27		11g / 15 ms
Minimum ON period ms 35  Degree of pollution 3  Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value % 5  Product extension required remote control No	Relative repeat accuracy	%	1
Degree of pollution  Insulation voltage for overvoltage category III  according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  3 0 3 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recovery time	ms	150
Insulation voltage for overvoltage category III  according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  No	Minimum ON period	ms	35
according to IEC 60664 with degree of pollution 3 rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  No	Degree of pollution		3
rated value  Relative setting accuracy relating to full-scale value  Product extension required remote control  No	Insulation voltage for overvoltage category III	V	300
Product extension required remote control No			
	Relative setting accuracy relating to full-scale value	%	5
Product extension optional remote control No	Product extension required remote control		No
	Product extension optional remote control		No

Switching Function:		
Switching function		
<ul><li>ON-delay</li></ul>	No	
<ul> <li>ON-delay/instantaneous contact</li> </ul>	No	
<ul> <li>passing make contact</li> </ul>	No	
<ul> <li>passing make contact/instantaneous contact</li> </ul>	No	
OFF delay	No	
<ul> <li>flashing asymmetrically starting with interval</li> </ul>	No	
<ul> <li>flashing asymmetrically starting with pulse</li> </ul>	No	
<ul> <li>flashing symmetrically starting with pulse</li> </ul>	No	

	No
	No
	No
	No
	No
	No
	No
	Yes
	No
	No
	No
	No
	No
	Yes
S	0.5 10
	AC/DC
Hz	50 60
Hz	50 60
٧	24
V	24
V	24 24
V	24
	Hz

Operating range factor control supply voltage rated value	
• at AC	
— at 50 Hz	0.85 1.1
— at 60 Hz	0.85 1.1
• at DC	0.85 1.1

uxiliary circuit:		
Contact reliability of auxiliary contacts		one incorrect switching operation of 100 million
		switching operations (17 V, 5 mA)
Material of switching contacts		AgSnO2
Operating current of auxiliary contacts		
● at AC-15		
— at 24 V	Α	3
— at 250 V	Α	3
● at DC-13		
— at 24 V	Α	1
— at 125 V	Α	0.2
— at 250 V	Α	0.1
Influence of the surrounding temperature		±5 %
Power supply influence		±1 %
Test voltage for isolation test	kV	2
Design of the fuse link for short-circuit protection of		fuse gL/gG: 4 A
the auxiliary switch required		
Thermal current	Α	5
Short-time current resistance (Icw) limited to 10 ms	Α	10
Number of NC contacts		
<ul> <li>delayed switching</li> </ul>		0
• instantaneous contact		0
Number of NO contacts		
delayed switching		0
• instantaneous contact		0
Number of CO contacts		
delayed switching		1
• instantaneous contact		0
Contact rating of auxiliary contacts according to UL		R300 / B300

Installation/ mounting/ dimensions:			
Mounting type		screw and snap-on mounting onto 35 mm standard mounting rail	
Width	mm	22.5	
Height	mm	102	
Depth	mm	91	
Required spacing with side-by-side mounting			

		•
• upwards	mm	0
• forwards	mm	0
• at the side	mm	0
Backwards	mm	0
<ul><li>downwards</li></ul>	mm	0
Required spacing for grounded parts		
Backwards	mm	0
• at the side	mm	0
• upwards	mm	0
• forwards	mm	0
<ul><li>downwards</li></ul>	mm	0
Required spacing for live parts		
• downwards	mm	0
Backwards	mm	0
• at the side	mm	0
• forwards	mm	0
• upwards	mm	0

Connections/ Terminals:		
Type of electrical connection for auxiliary and control current circuit		screw-type terminals
Product function removable terminal for auxiliary and control circuit		Yes
Type of connectable conductor cross-sections		
• solid		1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)
<ul> <li>finely stranded</li> </ul>		
<ul><li>— with core end processing</li></ul>		1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
<ul> <li>at AWG conductors</li> </ul>		
— stranded		2x (20 14)
— solid		2x (20 14)
Tightening torque	N·m	0.8 1.2
Design of the thread of the connection screw		M3

## Certificates/approvals

## **General Product Approval**

**Declaration of** Conformity

**Test** 

Certificates











spezielle Prüfbescheinigunge n

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Certifica	ites

**Shipping Approval** 

Typprüfbescheinigu ng/Werkszeugnis





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Shipping	
Approval	

other

sonstig

Bestätigungen

Umweltbestätigung



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

http://www.siemens.com/industrial-controls/catalogs

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RP1531-1AP30

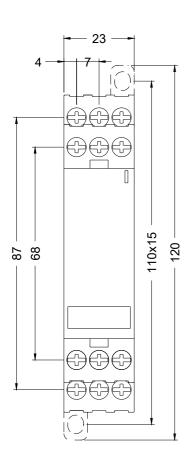
Cax online generator

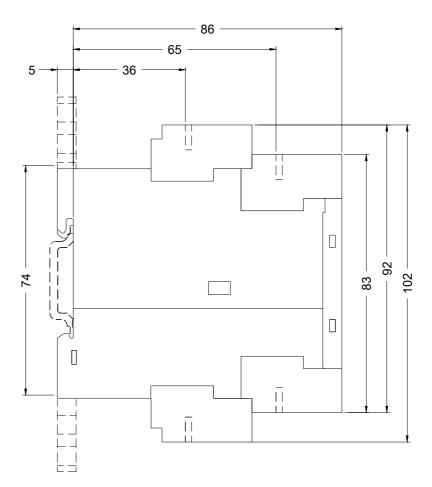
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RP1531-1AP30

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

https://support.industry.siemens.com/cs/ww/en/ps/3RP1531-1AP30

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RP1531-1AP30&lang=en





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