SIEMENS

Data sheet 3RF2190-1AA45



semiconductor relay, 1-phase 3RF2 width 22.5 mm, 90 A 48-600 V / 4-30 V DC screw terminal blocking voltage 1200 V for mounting on available cooling surfaces

product type designation design of the product product type designation manufacturor's article number • _1 of the accessories that can be ordered • _2 of the accessories that can be ordered 38F299.0HA16 • _3 of the accessories that can be ordered 38F299.0HA16 • _3 of the accessories that can be ordered 38F299.0HA16 • _4 of the accessories that can be ordered 38F299.0HA16 • _5 of the accessories that can be ordered 88F299.0HA16 • _5 of the accessories that can be ordered • _5 of the accessories that can be ordered • _5 of the accessories that can be ordered • _2 of the accessories that can be ordered • _5 of the accessories that can be ordered • _5 of the accessories that can be ordered • _5 of the accessories that can be ordered • _5 of the accessories that can be ordered • _6 of the accessories that can be ordered • _6 of the accessories that can be ordered • _6 of the accessories that can be ordered • _6 of the accessories that can be ordered • _6 of the accessories that can be ordered • _6 of the accessories that can be ordered • _1 of the accessories that can be ordered • _6 of the accessories that can be ordered • _6 of the accessories that can be ordered • _1 of the accessories that can be ordered • _1 of the accessories that can be ordered • _1 of the accessories that can be ordered • _2 of the accessories that can be ordered • _1 of the accessories that can be ordered • _2 of the accessories that can be ordered • _1 of the accessories that can be ordered • _2 of the accessories that can be ordered • _2 of the accessories that can be ordered • _1 of the accessories that can be ordered • _2 of the accessories that can be ordered • _2 of the accessories that can be ordered • _1 of the accessories that can be ordered • _2 of the accessories that can be ordered • _1 of the accessories that can be ordered • _1 of the accessories that can be ordered • _1 of the accessories that can be ordered • _1 of the accessories that can be ordered • _1 of the accessories t	product brand name	SIRIUS
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_ 4 of the accessories that can be ordered _ 5 of the accessories that can be ordered _ 5 of the accessories that can be ordered _ 5 of the accessories that can be ordered General technical data product function power loss [W] for rated value of the current _ at AC in hot operating state _ at AC in hot operating state per pole _ without load current share typical _ without load current share typical _ surge voltage resistance of main circuit rated value _ surge voltage resistance of main circuit rated value _ protection class IP _ protection class IP	 _2 of the accessories that can be ordered 	power regulator
o _ 5 of the accessories that can be ordered General technical data product function power loss [W] for rated value of the current • at AC in hot operating state per pole • without load current share typical insulation voltage rated value surge voltage resistance of main circuit rated value protection class IP protection class IP in the front according to IEC 600529 shock resistance according to IEC 60068-2-27 vibration resistance according to IEC 60068-2-6 greference code according to IEC 81346-2 Qu Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight Main circuit number of NO contacts for main contacts number of NO contacts for main contacts number of NO contacts for main contacts type of voltage of the operating voltage AC operating voltage	 _3 of the accessories that can be ordered 	converter
product function zero-point switching power loss [W] for rated value of the current • at AC in hot operating state 118 W • at AC in hot operating state per pole 118 W • without load current share typical 0.5 W insulation voltage rated value 600 V surge voltage resistance of main circuit rated value 6 kV protection class IP IP20 protection class IP on the front according to IEC 60529 IP20 shock resistance according to IEC 60068-2-7 15g / 11 ms vibration resistance according to IEC 60068-2-6 2g reference code according to IEC 81346-2 Q Substance Prohibitance (Date) 05/28/2009 SVHC substance name Lead -7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight 0.073 kg Main circuit number of NO contacts for main contacts 1 number of NO contacts for main contacts 1 number of NC contacts for main contacts 0 type of voltage of the operating voltage AC operating voltage	_4 of the accessories that can be ordered	load monitoring
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power loss [W] for rated value of the current • at AC in hot operating state 118 W • at AC in hot operating state per pole 118 W • without load current share typical 0.5 W insulation voltage rated value 600 V surge voltage resistance of main circuit rated value 6 kV protection class IP IP20 protection class IP on the front according to IEC 60529 IP20 shock resistance according to IEC 60068-2-27 15g / 11 ms vibration resistance according to IEC 60068-2-27 2g reference code according to IEC 81346-2 Q Substance Prohibitance (Date) 05/28/2009 SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight 0.073 kg Main circuit number of Poles for main current circuit 1 number of NO contacts for main contacts 1 number of NC contacts for main contacts 0 type of voltage of the operating voltage AC operating voltage	General technical data	
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at AC in hot operating state per pole without load current share typical insulation voltage rated value surge voltage resistance of main circuit rated value be to the front according to IEC 60529 shock resistance according to IEC 60068-2-27 reference code according to IEC 60068-2-6 gubstance Prohibitance (Date) SVHC substance name Weight 0.073 kg Main circuit number of NO contacts for main contacts number of NC contacts for main contacts type of voltage of the operating voltage obo V 118 W 0.5 W insulation voltage rated value 600 V 6 kV PP20 IP20 IP20 IP20 SP20 SP20 SP20 SP20 SP20 SP20 SP20 SP20 SP3/28/2009 SP3/28/2009 SP4C substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight 0.073 kg AC Operating voltage AC	power loss [W] for rated value of the current	
without load current share typical insulation voltage rated value surge voltage resistance of main circuit rated value protection class IP protection class IP	 at AC in hot operating state 	118 W
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surge voltage resistance of main circuit rated value protection class IP protection class IP on the front according to IEC 60529 shock resistance according to IEC 60068-2-27 shock resistance according to IEC 60068-2-27 vibration resistance according to IEC 80068-2-6 reference code according to IEC 81346-2 Q Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts type of voltage of the operating voltage overating voltage	without load current share typical	0.5 W
protection class IP protection class IP on the front according to IEC 60529 shock resistance according to IEC 60068-2-27 15g / 11 ms vibration resistance according to IEC 60068-2-6 2g reference code according to IEC 81346-2 Q Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight 0.073 kg Main circuit number of poles for main current circuit 1 number of NO contacts for main contacts 1 number of NC contacts for main contacts 0 type of voltage of the operating voltage AC operating voltage	insulation voltage rated value	600 V
protection class IP on the front according to IEC 60529 shock resistance according to IEC 60068-2-27 15g / 11 ms vibration resistance according to IEC 60068-2-6 2g reference code according to IEC 81346-2 Q Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight 0.073 kg Main circuit number of poles for main current circuit number of NO contacts for main contacts 1 number of NC contacts for main contacts type of voltage of the operating voltage operating voltage	surge voltage resistance of main circuit rated value	6 kV
shock resistance according to IEC 60068-2-27 vibration resistance according to IEC 60068-2-6 reference code according to IEC 81346-2 Q Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight 0.073 kg Main circuit number of poles for main current circuit number of NO contacts for main contacts type of voltage of the operating voltage AC operating voltage	protection class IP	IP20
vibration resistance according to IEC 60068-2-6 reference code according to IEC 81346-2 Q Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight 0.073 kg Main circuit number of poles for main current circuit number of NC contacts for main contacts type of voltage of the operating voltage AC operating voltage	protection class IP on the front according to IEC 60529	IP20
reference code according to IEC 81346-2 Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight 0.073 kg Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts type of voltage of the operating voltage AC operating voltage	shock resistance according to IEC 60068-2-27	15g / 11 ms
Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight 0.073 kg Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts type of voltage of the operating voltage AC operating voltage	vibration resistance according to IEC 60068-2-6	2g
SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight 0.073 kg Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts type of voltage of the operating voltage AC operating voltage	reference code according to IEC 81346-2	Q
Lead monoxide (lead oxide) - 1317-36-8 Weight 0.073 kg Main circuit number of poles for main current circuit 1 number of NO contacts for main contacts 1 number of NC contacts for main contacts 0 type of voltage of the operating voltage AC operating voltage	Substance Prohibitance (Date)	05/28/2009
Main circuit number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts type of voltage of the operating voltage operating voltage	SVHC substance name	
number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts type of voltage of the operating voltage operating voltage	Weight	0.073 kg
number of NO contacts for main contacts number of NC contacts for main contacts type of voltage of the operating voltage AC operating voltage	Main circuit	
number of NC contacts for main contacts type of voltage of the operating voltage AC operating voltage	number of poles for main current circuit	1
type of voltage of the operating voltage AC operating voltage	number of NO contacts for main contacts	1
operating voltage		0
	type of voltage of the operating voltage	AC
• at AC	operating voltage	
	• at AC	

— at 50 Hz rated value	48 600 V
— at 60 Hz rated value	48 600 V
operating frequency rated value	50 60 Hz
relative symmetrical tolerance of the operating frequency	10 %
operating range relative to the operating voltage at AC	0 //
• at 50 Hz	40 660 V
• at 60 Hz	40 660 V
operational current rated value maximum	88 A
operational current	
at AC-51 rated value	50 A
 according to UL 508 rated value 	50 A
operational current minimum	500 mA
rate of voltage rise at the thyristor for main contacts maximum permissible	1 000 V/µs
blocking voltage at the thyristor for main contacts maximum permissible	1 200 V
reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	1 150 A
I2t value maximum	6 600 A²-s
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage 1 at DC rated value maximum	30 V
permissible	
control supply voltage 1 at DC	4 30 V
control supply voltage	
• at DC full-scale value for signal<0> recognition	1 V
control current at minimum control supply voltage	
• at DC	13 mA
control current at DC rated value	15 mA
ON-delay time	1 ms; additionally max. one half-wave
OFF-delay time	1 ms; additionally max. one half-wave
OFF-delay time Auxiliary circuit	1 ms; additionally max. one half-wave
	1 ms; additionally max. one half-wave normally open contact (NO)
Auxiliary circuit	
Auxiliary circuit type of switching contact	normally open contact (NO)
Auxiliary circuit type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts	normally open contact (NO)
Auxiliary circuit type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts	normally open contact (NO) 0
Auxiliary circuit type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts	normally open contact (NO) 0
Auxiliary circuit type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions	normally open contact (NO) 0 0 Ves screw fixing
Auxiliary circuit type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts lnstallation/ mounting/ dimensions fastening method side-by-side mounting fastening method design of the thread of the screw for securing the equipment	normally open contact (NO) 0 0 Ves screw fixing M4
Auxiliary circuit type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts linstallation/ mounting/ dimensions fastening method side-by-side mounting fastening method design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum	normally open contact (NO) 0 0 Ves screw fixing M4 1.5 N·m
Auxiliary circuit type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method side-by-side mounting fastening method design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum	normally open contact (NO) 0 0 Yes screw fixing M4 1.5 N·m 13 lbf·in
type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method side-by-side mounting fastening method design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height	normally open contact (NO) 0 0 1 Yes screw fixing M4 1.5 N·m 13 lbf·in 85 mm
Auxiliary circuit type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method side-by-side mounting fastening method design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width	normally open contact (NO) 0 0 Yes screw fixing M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm
type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method side-by-side mounting fastening method design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth	normally open contact (NO) 0 0 1 Yes screw fixing M4 1.5 N·m 13 lbf·in 85 mm
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type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method side-by-side mounting fastening method design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals product component removable terminal for auxiliary and control circuit type of electrical connection	normally open contact (NO) 0 0 Yes screw fixing M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm
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type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method side-by-side mounting fastening method design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals product component removable terminal for auxiliary and control circuit type of electrical connection • for main current circuit • for auxiliary and control circuit	normally open contact (NO) 0 0 Yes screw fixing M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm
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type of switching contact number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method side-by-side mounting fastening method design of the thread of the screw for securing the equipment tightening torque of fixing screw maximum tightening torque [lbf-in] of fixing screw maximum height width depth Connections/ Terminals product component removable terminal for auxiliary and control circuit type of electrical connection	normally open contact (NO) 0 0 Yes screw fixing M4 1.5 N·m 13 lbf·in 85 mm 22.5 mm 48 mm Yes screw-type terminals screw-type terminals
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Test Certificates other

Special Test Certificate

Type Test Certificates/Test Report



Confirmation



Special Test Certificate

Railway

Environment

Environmental Confirmations

Further information

Information on the packaging

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

Information for data generation and storage

https://support.industry.siemens.com/cs/ww/en/view/109995012

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=3RF2190-1AA45

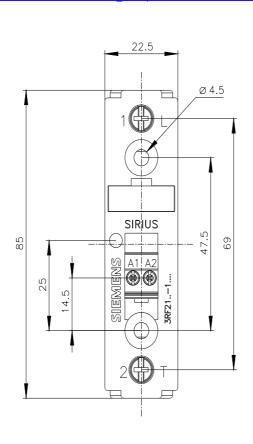
Cax online generator

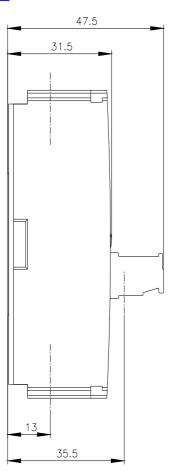
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2190-1AA45

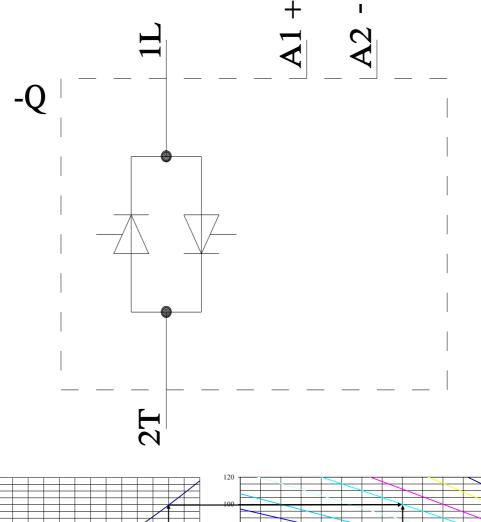
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

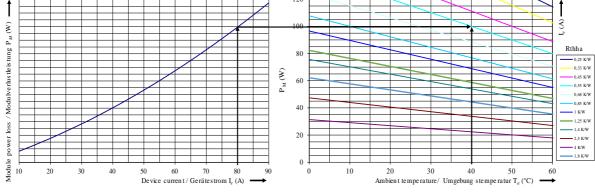
https://support.industry.siemens.com/cs/ww/en/ps/3RF2190-1AA45

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2190-1AA45&lang=en









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