



SIRIUS 3RB10 Solid State Overload Relays

Trip Curve characteristics

The trip curves show phase overload from cold state[®], from warm state[®] and in the event of phase failure or current unbalance[®]. In the event of phase failure or current unbalance, the failure protection function becomes active. The overload relay trips in 3 s, even if the motor is lightly loaded.

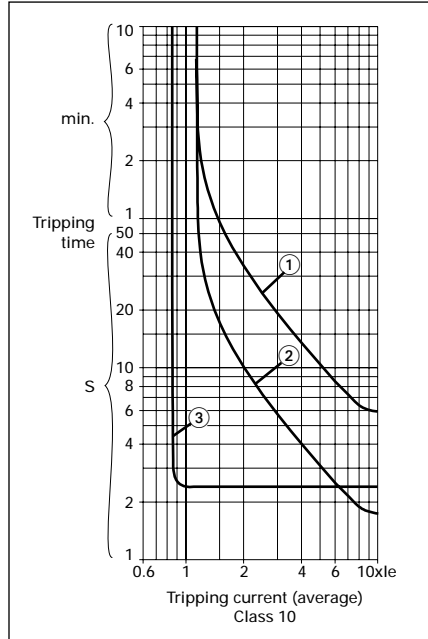
The characteristic curves of trip class 10 and the behavior in operation are replicated from the 3RU overload relays.

Trip classes of thermal, delayed magnetic or solid-state overload relays

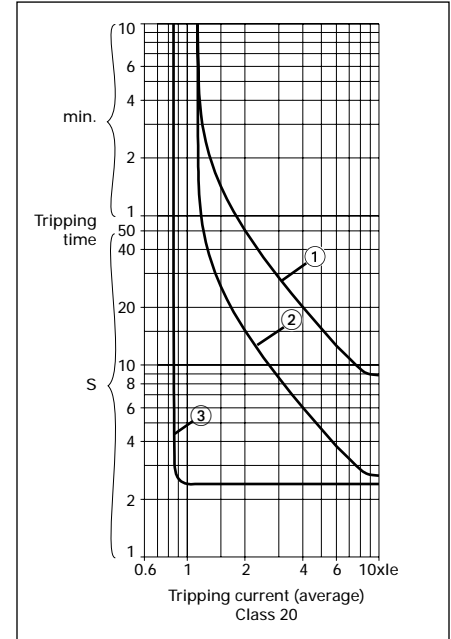
Excerpt from IEC 947-4-1

Trip Class	Tripping time t_A in seconds at $7.2 \times I_e$ from cold state
10A	$2 < t_A \leq 10$
10	$4 < t_A \leq 10$
20	$6 < t_A \leq 20$
30	$9 < t_A \leq 30$

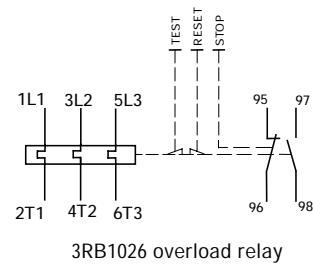
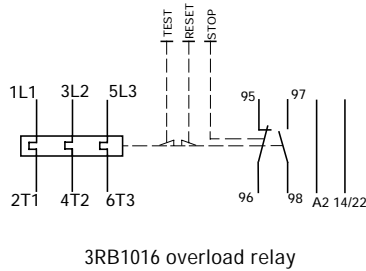
Time-current characteristic for trip class CLASS 10



Time-current characteristic for trip class CLASS 20



Internal circuit diagrams





SIRIUS 3RB10 Solid State Overload Relays

Technical Data

Overload Type		3RB1016	3RB1026	3RB1036	3RB1046	
Trip Class	according to IEC 947-4-1	Class 10 or 20				
Permissible ambient temperature range	storage operation	°F (°C) –40 to +176 (–40 to +80) –13 to +158 (–25 to +70)				
Phase failure protection		yes—less than 3 seconds				
Adjustable to automatic reset		yes				
RESET button with trip-free feature		yes				
Switch position indicator		yes				
TEST function		yes				
STOP button		yes				
Degree of protection	acc. to IEC 529/IEC 947-1/DIN VDE 0470 Part 1	IP20	IP20	IP00	IP00	
Shock-hazard protection	acc. to DIN VDE 0106 Part 100	safe from finger touch				
Shock-resistance with sine	acc. to IEC 68 Part 2-27	g/ms	8/10	8/10	8/10	
Main Circuit						
Rated insulation voltage U_i (pollution degree 3)		V	690	690	690	1000
Rated impulse withstand voltage U_{imp}		kV	6	6	6	8
Type of current, frequency range		3 Phase AC, 50/60Hz ± 3Hz (Not for DC)				
Safe isolation between aux. and main circuits	acc. to DIN VDE 0106 part 101	V	400			
Conductor cross-sections for main power terminals						
Type of connection		Screw connection	Screw connection	Box terminal	Box terminal	
Terminal screw		Pozidrive size 2	Pozidrive size 2	Pozidrive size 2	Allen head	
Minimum–maximum conductor sizes	1 conductor	AWG	18–14	14–10	18–2	10–2/0
screw-type or cage clamp versions	2 conductors	AWG	18–14	14–10	18–3	10–1/0
Removable box terminals for busbar connection		No	No	No	Yes	
Auxiliary Circuit						
Auxiliary Contacts		1 NO & 1 NC				
Contact rating		AC	B600			
		DC	R300			
Contact reliability		Contacts are suitable for PLC (17V, 5mA)				
Rated impulse withstand voltage U_{imp}		kV	6			
Safe isolation between auxiliary circuits	acc. to DIN VDE 0106 Part 101 A1	V	400			
Conductor cross-sections for auxiliary terminals			Screw connection	Cage Clamp connection		
Type of connection			Pozidrive size 2	—		
Terminal screw						
Minimum–maximum conductor sizes	1 or 2 conductors	AWG	18–14	18–14		
Separate Mounting Kit						
Type		3RU1916-3AA01	3RU1926-3AA01	3RU1936-3AA01	3RU1946-3AA01	
For overload relay type		3RB1016	3RB1026	3RB1036	3RB1046	
Mounting capability	Screw to panel 35 mm DIN rail 75 mm DIN rail	Yes Yes No	Yes Yes No	Yes Yes No	Yes Yes Yes	
Conductor cross-sections for line side power terminals			Screw connection	Screw connection	Box terminal	Box terminal
Type of connection			Pozidrive size 2	Pozidrive size 2	Pozidrive size 2	Allen head
Terminal screw						
Minimum–maximum conductor sizes	1 conductor	AWG	18–14	14–10	18–2	10–2/0
	2 conductors	AWG	18–14	14–10	18–3	10–1/0
Weight						
Overload weight		kg	.24	.26	.41	.71