SLO 24TRA

SL-series plug-in output relay, 1 NO 2,5A (60A/20ms)/415 VAC

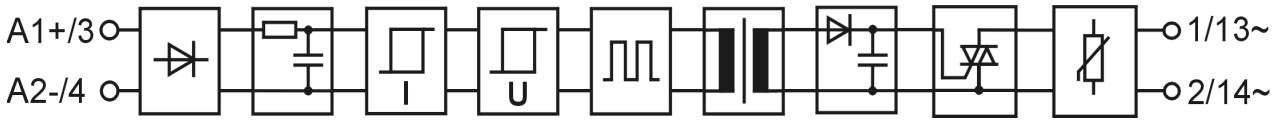
Typically used

- For 1-phase motor on/off and reverse control

Main features

- 10-year warranty
- CE (EMC and LVD)
- Integrated status LED

Functional block diagram



Filters against electrical noises *galvanic isolation 4,6 kV* *NO contact with protection*

Main specifications

Breakdown voltage I/O	minimum	4600	VAC rms
Air/creepage distances I/O	minimum	8	mm
Capacitance I/O	typical	3	pF
Material of the casing	PBT	UL 94V-0	
Colour of the casing		Black	
Weight	typical	40	g
Temperature range:			
Storage	range	-40...+70	°C
Operation	range	-25...+70	°C

Electrical specifications (T_A = 25 °C)

Primary				**Secondary**			
Input voltage	nominal	24	VDC	Load voltage motor/static load	minimum	0	VAC
Input current at nominal voltage	typical	15	mA		nominal	240/415	VAC
	maximum	17	mA		maximum	265/460	VAC
Input voltage range (abs.)	minimum	18	VDC	Load current	maximum	2,5	A
	maximum	32	VDC	Load current	maximum	65	A (20 ms)
Input impedance	typical	1,4	kΩ	Voltage drop	typical	1	V
Switch-on voltage *	typical	16	VDC	Switch-on delay	typical	0,5	ms
	maximum	18	VDC		maximum	1	ms
Switch-off voltage	typical	14	VDC	Switch-off delay	typical	-	ms
	minimum	12	VDC		maximum	11	ms
				Load power factor, cos Φ		0...1	
				dv/dt, off-state	typical	4000	V/µs
				Leakage current (off-state)	typical	50	µA

Ambient temperature (T_A) means the temperature immediate in vicinity of relays, where the air flow meets the relays.

* Switch-on voltage is 20,4 VDC maximum over the operational temperature range (24 VDC – 15 %).

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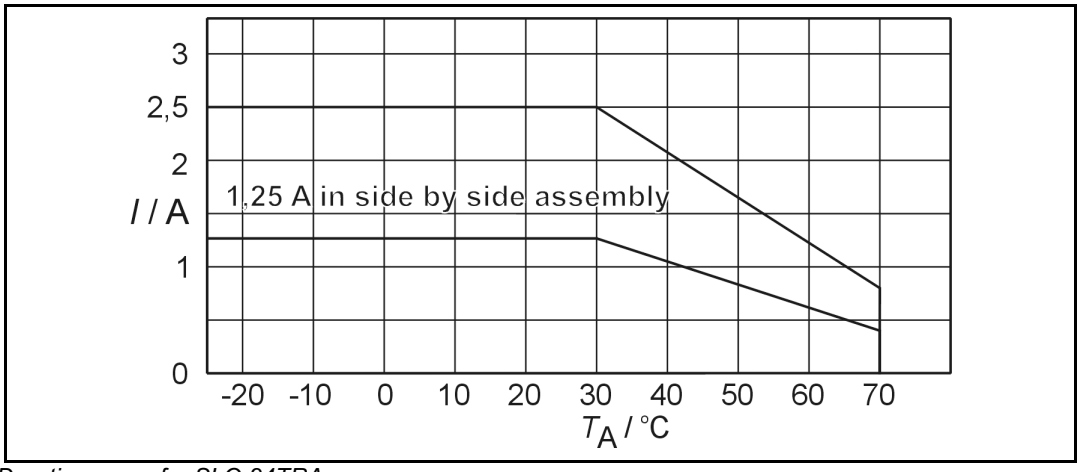
Deratings

Allowed load is derated to 1/3 linearly from +30 ºC to +70 ºC ambient temperature. When relays are mounted together as a bank also in MIOS 1A –sockets the maximum load current for long period of time should be restricted in total to 50 % of the current from the curve. I.e. all relays at 50 % load continuously or 50 % of the relays at 100 % load continuously or all relays at 100 % load 50 % of the time. This restriction does not apply if there is at least 12,5 mm gap between relays. These deratings apply when assembled to the horizontal rail. If assembled to the vertical rail, must be taken care that the relays do not heat up too much.



Derating curve for SLO 24TRA.

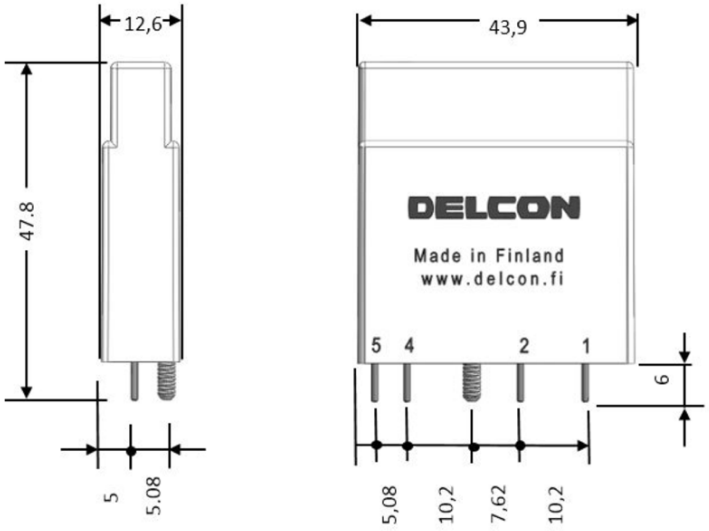
Derating when switching inductive loads

There is no need to derate solid state output relay using a triac switch. The relay is indifferent to the power factor of the load. Calculation should be made however that the surge current does not exceed the specification. For reasons of heat dissipation, when the load will be switched frequently, the average current over a reasonable time should not exceed the specification for continuous operation. When used with motor solution in reverse use the surge current must be limited to 65 A (20 ms) with for instance resistors in series with the relays and the motor windings.

Fusing

To protect relay against short circuit and overload a fast fuse with the correct rating for the load and the capacity of the relay should be chosen. Note that when overload current is not large it is possible that the fuse will not protect the relay because of the tolerance on the fuse rating.

Mechanical dimensions



SLO xxx -relay (plug-in), dimensions in mm, nominal.

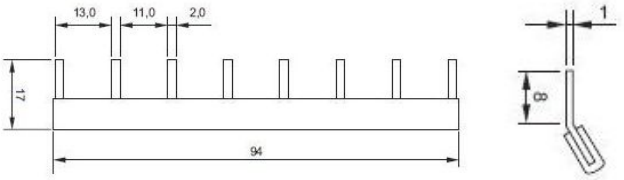
Related products for SLOxxx relays

DIN-rail sockets for single relays

MOS 1GN screw terminals
MOS 1CCN spring terminals

Jumper bars for cross-connecting relays in parallel

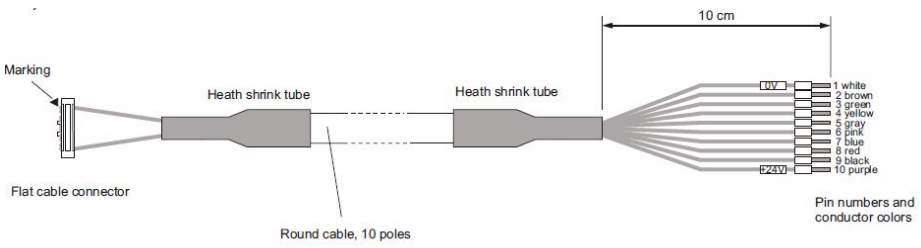
JUMPER 8-13 Chaining Jumper for 8 relays
JUMPER 16-13 Chaining Jumper for 16 relays



DIN-rail mounting bases with easy PLC connection

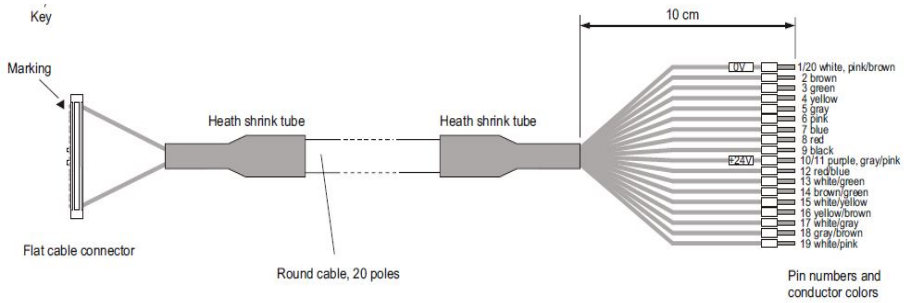
MBS 8BIOP for 8 relays, screw terminals
MBS 8BIOPCC for 8 relays, spring terminals

RC10X-xxx applicable 10-pole round cable (xxx = length /cm, in 50 cm steps)
Connection to PLC with colour coded single wires with ferrules

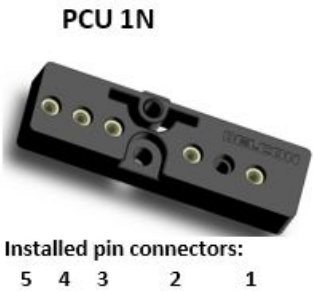


MBS 16BIOP for 16 relays, screw terminals
MBS 16BIOPCC for 16 relays, spring terminals

RC20X-xxx applicable 20-pole round cable (xxx = length/cm, in 50 cm steps)
Connection to PLC with colour coded single wires with ferrules



PCB sockets



Approvals

CE	Fulfils main requirements of the EMC-directive 2004/108/EC. The relay has been designed to operate correctly with difficult loads in disturbed environments. Thus it does not meet the conducted emission for 150 kHz...2 MHz. Fulfils requirements of the low voltage directive (LVD) 2006/95/EC.

Guarantee

This solid state I/O relay type made by Delcon Oy is guaranteed free from design and manufacturing defects for a period of 10 years from the manufacturing date. The guarantee liability is limited to replacement of defective material and related shipping charges. Defective products must be returned to the manufacturer for evaluation. This guarantee does not cover damage due to incorrect use or electrical overload.