

FEATURES/BENEFITS

- Zero-cross models for resistive loads
- Low zero-cross turn-on voltage
- Input protection and control LED standard
- IP20 touch-proof flaps optional
- Connectors for power wiring and heat sinks available
- Designed in conformity with EN60947-4-3 (IEC947-4-3) and EN60950/VDE0805 (Reinforced Insulation)

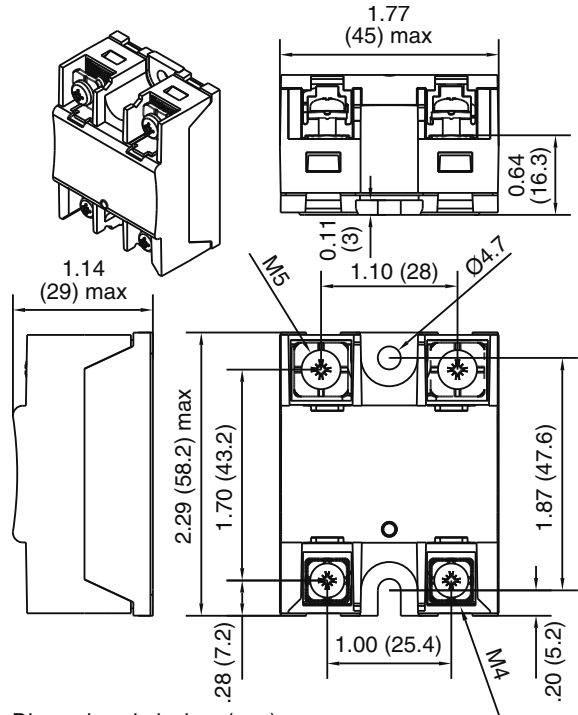


With IP20 touch-proof flaps

Without IP20 touch-proof flaps

Part No.	Load Voltage	Load Current	Control Voltage	Switch Type
STH24D12	12-280 Vac	12A	3-32 Vdc	Zero Cross
STH24D25	12-280 Vac	25A	3-32 Vdc	Zero Cross
STH24D35	12-280 Vac	35A	3-32 Vdc	Zero Cross
STH24D50	12-280 Vac	50A	3-32 Vdc	Zero Cross
STH48D35	24-600 Vac	35A	3-32 Vdc	Zero Cross
STH48D50	24-600 Vac	50A	3-32 Vdc	Zero Cross
STH24D75	24-600 Vac	75A	3-32 Vdc	Zero Cross

MECHANICAL SPECIFICATION



Dimensions in inches (mm)
Weight: 2.82 oz. (80g)

Figure 2

TYPICAL APPLICATION

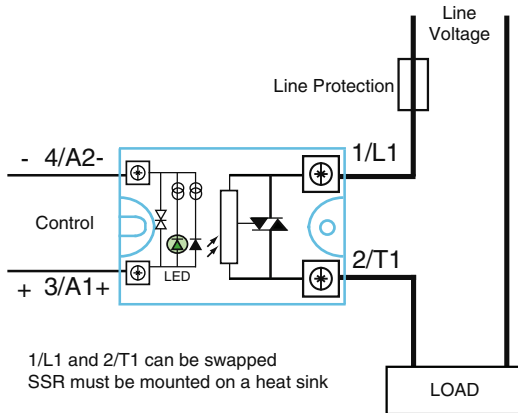


Figure 1a — STH relays, up to 25A

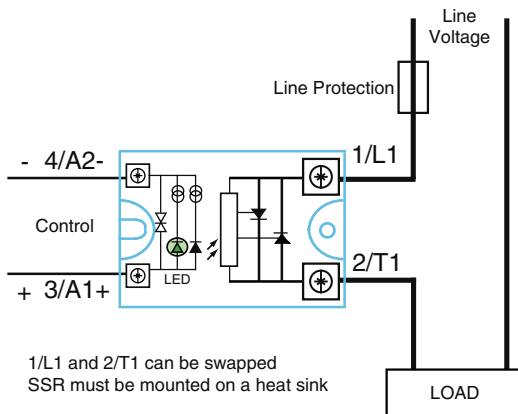


Figure 1b — STH relays, 35A and above

CONTROL CHARACTERISTICS

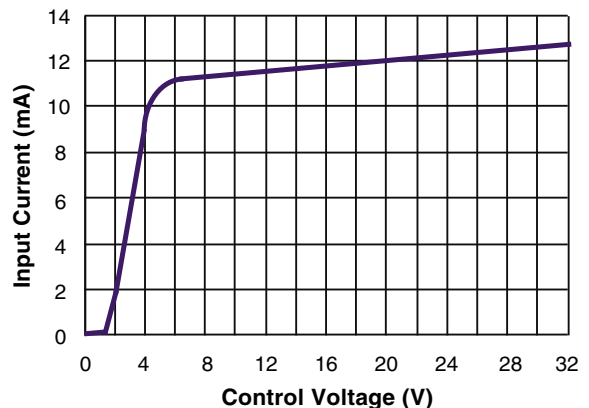


Figure 3 — STH relays

ELECTRICAL SPECIFICATIONS

(+25°C ambient temperature unless otherwise specified)

INPUT (CONTROL) SPECIFICATIONS

	Min	Max	Units
Input Current Range	10	13	mA
Must Turn-Off Voltage	2.0	Vdc	
Reverse Voltage Protection (R/D)		32	V
Clamping Voltage (R/D)		36	V
Input Immunity (EN61000-4-4)		2	kV
Input Immunity (EN61000-4-5)		2	kV

OUTPUT (LOAD) SPECIFICATIONS

	Min	Max	Units
Peak Voltage			
STH24DXX		600	V _{peak}
STH48DXX		1200	V _{peak}

Load Current Range (Resistive)

	Min	Max	Units
12 output current	.005	12	Arms
25 output current	.005	25	Arms
35 output current	.005	40	Arms
50 output current	.005	60	Arms
75 output current	.005	90	Arms

Maximum Surge Current Rating (Non-Repetitive)

	Min	Max	Units
12 output current		170	A
25 output current		350	A
35 output current		500	A
50 output current		720	A
75 output current		1200	A

On-State Voltage Drop

	Min	Max	Units
Up to 25 output current		0.85	V
Above 35 output current		0.9	V

Output Power Dissipation (Max)

	Min	Max	Units
12 output current	$0.9 \times 0.85 \times I + 0.042 \times I^2$		W
25 output current	$0.9 \times 0.85 \times I + 0.016 \times I^2$		W
35 output current	$0.9 \times 0.9 \times I + 0.015 \times I^2$		W
50 output current	$0.9 \times 0.9 \times I + 0.012 \times I^2$		W
75 output current	$0.9 \times 0.9 \times I + 0.0045 \times I^2$		W

Zero-Cross Window (Typical)	±35	Vac
Off-State Leakage Current	1	mA
Turn-On Time (60 Hz)	8.3	ms
Turn-Off Time (60 Hz)	8.3	ms
Off-State dv/dt	500	V/μs
Maximum di/dt (Non-Repetitive)	50	A/μs
Operating Frequency	0.1	800 Hz

I²t for fuse matching (<10ms)

12 output current	128	A ² s
25 output current	600	A ² s
35 output current	1250	A ² s
50 output current	2500	A ² s
75 output current	7200	A ² s

Junction-Case Thermal Resistance

12 output current	2.5	°C/W
25 output current	1.7	°C/W
35 output current	0.6	°C/W
50 output current	0.45	°C/W
75 output current	0.4	°C/W

Conducted Immunity Level

IEC/EN61000-4-4 (bursts)	2kV criterion B
IEC/EN61000-4-5 (surge)	2kV criterion A (with external VDR)

GENERAL SPECIFICATIONS

(+25°C ambient temperature unless otherwise specified)

ENVIRONMENTAL SPECIFICATIONS

	Min	Max	Units
Operating Temperature			
Up to 35 output current	-55	+80	°C
STH24D50	-40	+100	°C
STH48XXX	-40	+80	°C

Storage Temperature			
Up to 35 output current	-55	+125	°C
STH24D50	-40	+100	°C
STH48XXX	-40	+125	°C

Ambient Humidity	40 to 85	%
Input-Output Isolation	4000	Vrms

Output-Case Isolation		
Up to 25 output current	2500	Vrms
Above 35 output current	4000	Vrms

Insulation Resistance @500Vdc	1000	MΩ
Rated Impulse Voltage	4000	V
Protection Level (CEI529)	IP20	
Vibration (10–55 Hz according to CE168)	1.5	mm
Shock (according to CD168)	30/50	g
Housing Material	PA6 UL94VO	
Baseplate	Aluminum, nickel-plated	

SURGE CURRENT

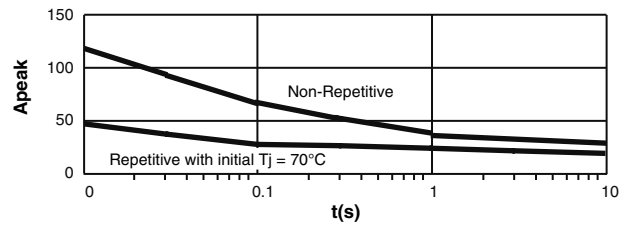


Figure 4a — 12A output current

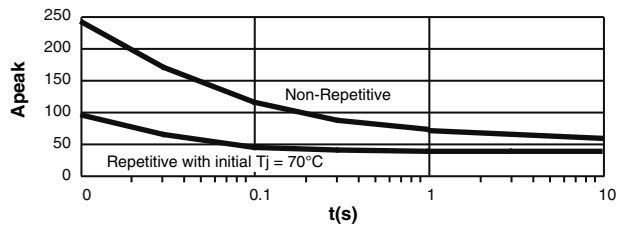


Figure 4b — 25A output current

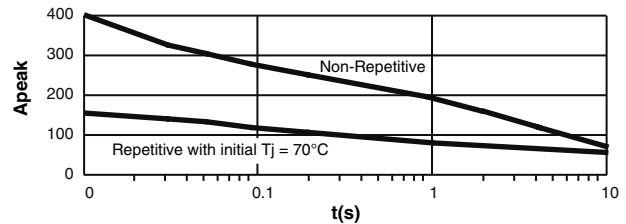


Figure 4c — 35A output current

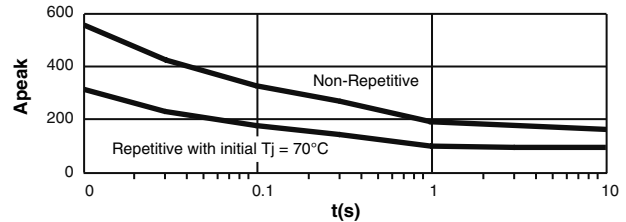


Figure 4d — 50A output current

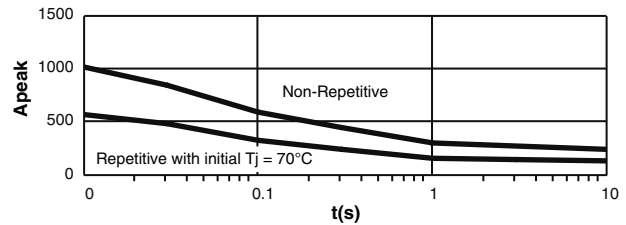


Figure 4e — 75A output current