



**finder**<sup>®</sup>  
SWITCH TO THE FUTURE

# Solid State Relays 5 - 15 - 30 - 50 A

**77**  
SERIES



Drying kilns



Heating and cooling



Lighting control  
in corridors (for  
hotels, offices  
and hospitals)



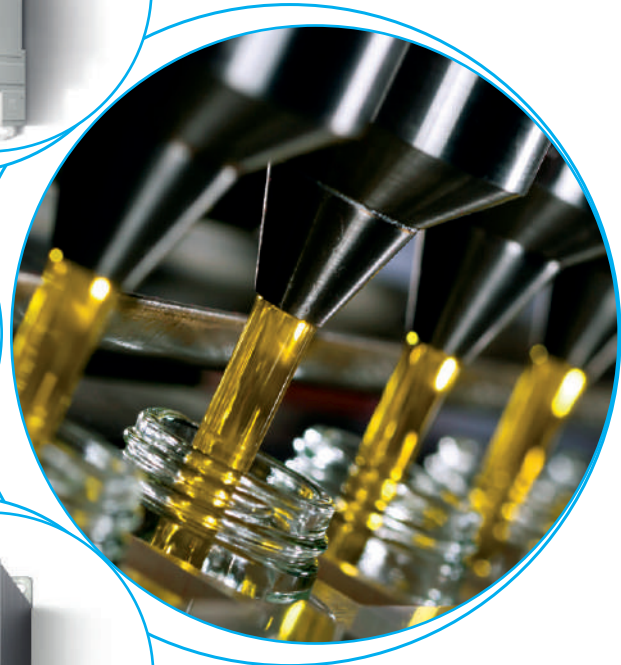
Bottling plant



Labelling  
machines



Packaging  
machines





**5 A modular SSR, 1 NO AC output**

- 17.5 mm housing
- 60 to 240 V AC output (with back to back SCR)
- 5 kV (1.2/50 μs) insulation between Input and Output
- Zero-crossing and random switch-on versions available
- High switching speed
- High endurance
- Silent switching
- Spark and bounce-free switching
- Low control power
- 3-phase general purpose
- 35 mm rail (EN 60715) mount

77.01

Screw terminal



\* See L77-3 diagram page 13

\*\* See L77-1 and L77-2 diagrams page 12

For outline drawing see page 16

**Output specification**

Output configuration	77.01.x.xxx.8050		77.01.x.xxx.8051	
Output configuration	1 NO (SPST-NO)		1 NO (SPST-NO)	
Rated current I <sub>N</sub> /Max. peak current* (10 ms)	A	5/300*	A	5/300*
Rated voltage	V AC (50/60 Hz)	230	V AC (50/60 Hz)	230
Switching voltage range	V AC (50/60 Hz)	48...265	V AC (50/60 Hz)	48...265
Repetitive peak off-state voltage	V <sub>pk</sub>	800	V <sub>pk</sub>	800
Rated load AC7a (cos φ = 0.8)	A	5	A	5
Rated load AC15	A	5	A	3
Single phase motor rating (230 V AC)	kW	—	kW	0.1
Nominal lamp rating:				
230 V incandescent/halogen W		1000		800
fluorescent tubes with electronic ballast W		1000		800
fluorescent tubes with electromechanical ballast W		1000		800
CFL W		800		400
230 V LED W		800		400
LV halogen or LED with electronic ballast W		800		400
LV halogen or LED with electromechanical ballast W		1000		800
Minimum switching current @ 230 V	mA	100	mA	100
Typical "OFF-state" leakage current @ 230 V	mA	0.5	mA	3.5
Max "ON-state" voltage drop @ 25 °C and 5 A/100 mA	V	0.85/1.5	V	0.85/1.5
Power loss @ 5 A	W	4	W	4

**Input specification**

Input specification	77.01.x.xxx.8050		77.01.x.xxx.8051	
Nominal voltage (U <sub>N</sub> )	V AC (50/60 Hz)	24	V AC (50/60 Hz)	24
	V DC	12...24	V DC	12...24
Rated power	VA (50 Hz)/W	0.6/0.5	VA (50 Hz)/W	0.6/0.5
Operating range	V AC (50/60 Hz)	16...32	V AC (50/60 Hz)	16...32
	V DC	9.8...32	V DC	9.8...32
Must drop-out voltage	V AC (50/60 Hz)/DC	2.4	V AC (50/60 Hz)/DC	2.4

**Technical data**

Electrical life	cycles	10 · 10 <sup>6</sup>	cycles	10 · 10 <sup>6</sup>
Operate/release time	ms	20/12	ms	9/8
Insulation between input and output (1.2/50 μs)	kV	5	kV	5
Ambient temperature	°C	-20...+70**	°C	-20...+70**
Protection category		IP 20		IP 20

**Approvals** (according to type)

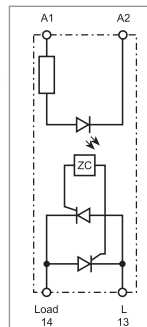


**77.01.x.xxx.8050**



**Zero-crossing switch-on Suggested applications:**

- Lamp inrush current reduction (CFL - Compact Fluorescent energy-saving Lamps and similar)
- Heater control
- Solenoid, contactor driver



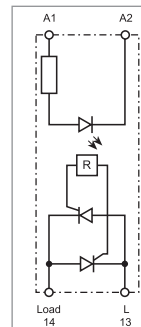
Simplified circuit diagram

**77.01.x.xxx.8051**



**Random switch-on Suggested applications:**

- Finer control requiring short operate time (specially motor control)
- AC Input phase different from AC Output phase



Simplified circuit diagram

**7 - 15 A modular SSR, 1 NO DC output**

- 17.5 mm housing
- 2 versions, for 24 and 125 V DC mosfet output
- 4 kV (1.2/50  $\mu$ s) insulation between Input and Output
- Short circuit protection
- High switching speed
- High endurance
- Silent switching
- Spark and bounce-free switching
- Low control power
- Suitable for railway applications
- 35 mm rail (EN 60715) mount

77.01

Screw terminal



\* See L77-12 and L77-13 diagrams page 12

For outline drawing see page 16

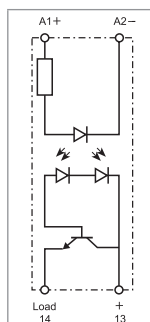
**Output specification**

Output configuration		1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current $I_N$ /Max. peak current (10 ms)	A	15/160	7/60
Rated voltage	V DC	24	125
Switching voltage range	V DC	16...32	43...140
Rated load DC13	A	5	2.5
DC motor rating	kW	0.2	—
Minimum switching current	mA	100	50
Typical "OFF-state" leakage current	mA	3	6
Max "ON-state" voltage drop @ 25 °C and $I_N$	V	0.06	0.2
Power loss @ $I_N$	W	1	1.5
<b>Input specification</b>			
Nominal voltage ( $U_N$ )	V DC	6...24	6...24
Rated power	W	0.5	0.5
Operating range	V DC	4...36	4...36
Must drop-out voltage	V DC	3	3
<b>Technical data</b>			
Electrical life	cycles	$10 \cdot 10^6$	$10 \cdot 10^6$
Operate/release time	ms	0.05/2	0.05/2
Insulation between input and output (1.2/50 $\mu$ s)	kV	4	4
Ambient temperature	°C	-20...+70*	-20...+70*
Protection category		IP 20	IP 20

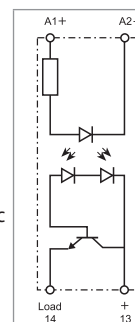
Approvals (according to type)

**77.01.9.024.9024****24 V DC output switching  
15 A rated****Applications in Energy,  
Automation and Machines:**

- Control of electric, pneumatic and hydraulic electromagnetic valves
- Direct control of loads such as motors and electromagnets

Simplified  
circuit diagram**77.01.9.024.9125****110...125 V DC output  
switching  
7 A rated****Applications in Energy,  
Automation and Machines:**

- Control of electric, pneumatic and hydraulic electromagnetic valves
- Direct control of loads such as motors and electromagnets

Simplified  
circuit diagram

**15 A modular SSR, 1 NO output**

- 22.5 mm housing, heat-sink + plastic cover
- 24 to 277 V AC output (with triac)
- 6 kV (1.2/50 µs) insulation between Input and Output
- Zero-crossing and random switch-on versions available
- High switching speed
- High endurance
- Silent switching
- Spark and bounce-free switching
- Low control power
- 3-phase general purpose
- "Relay-style" terminal arrangement (input and output terminals on opposite sides)
- 35 mm rail (EN 60715) mount

77.11  
Screw terminal



\* See L77-7 diagram page 13  
\*\* See L77-6 diagrams page 12

For outline drawing see page 16

**Output specification**

Output configuration	1 NO (SPST-NO)		1 NO (SPST-NO)	
Rated current $I_N$ /Max. peak current* (10 ms) A	15/400*		15/400*	
Rated voltage V AC (50/60 Hz)	230		230	
Switching voltage range V AC (50/60 Hz)	19...305		19...305	
Repetitive peak off-state voltage $V_{pk}$	800		800	
Rated load AC7a (cos φ = 0.8, @ 25 °C) A	20		20	
Rated load AC15 A	15		15	
Single phase motor rating (230 V AC) kW	—		0.75	
Nominal lamp rating:				
230 V incandescent/halogen W	4000		2500	
fluorescent tubes with electronic ballast W	4000		2500	
fluorescent tubes with electromechanical ballast W	2000		1000	
CFL W	3000		1500	
230 V LED W	3000		1500	
LV halogen or LED with electronic ballast W	3000		1500	
LV halogen or LED with electromechanical ballast W	3000		1500	
Minimum switching current @ 250 V mA	100		100	
Typical "OFF-state" leakage current @ 250 V mA	1		1	
Max "ON-state" voltage drop @ 25 °C and 15 A V	1.55		1.55	
Power loss @ 15 A W	14		14	

**Input specification**

Nominal voltage ( $U_N$ )	V AC (50/60 Hz)	—	230	—	230
	V DC	24	—	24	—
Rated power VA (50 Hz)/W		0.4	7.5/0.9	0.4	7.5/0.9
Operating range	V AC (50/60 Hz)	—	40...305	—	40...305
	V DC	4...32	—	4...32	—
Must drop-out voltage V AC (50/60 Hz)/DC		—/2	6/—	—/2	6/—

**Technical data**

Electrical life cycles		10 · 10 <sup>6</sup>		10 · 10 <sup>6</sup>	
Operate/release time ms		< 10/< 10	< 10/< 30	< 1/< 10	< 2/< 25
Insulation between input and output (1.2/50 µs) kV		6		6	
Ambient temperature °C		-20...+80**		-20...+80**	
Protection category		IP 20		IP 20	

**Approvals** (according to type)



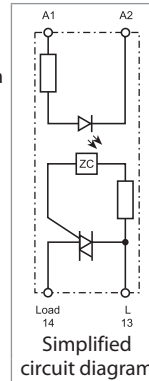
**77.11.x.xxx.8250**



**Zero-crossing switch-on**

**Suggested applications:**

- Lamp inrush current reduction (CFL - Compact Fluorescent energy-saving Lamps and similar)
- Heater control
- Solenoid, contactor driver



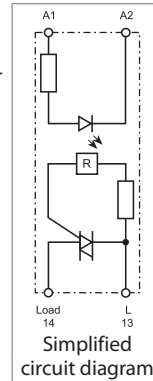
**77.11.x.xxx.8251**



**Random switch-on**

**Suggested applications:**

- Fine controls involving shorter time (specially motor control)



**30 A modular SSR, 1 NO output**

- 22.5 mm housing, heat-sink + plastic cover
- 60 to 440 V AC output (with back to back SCR)
- 6 kV (1.2/50  $\mu$ s) insulation between Input and Output
- Zero-crossing and random switch-on versions available
- High switching speed
- High endurance
- Silent switching
- Spark and bounce-free switching
- Low control power
- 3-phase general purpose
- "Relay-style" terminal arrangement (input and output terminals on opposite sides)
- 35 mm rail (EN 60715) mount

77.31

Screw terminal



\* See L77-5 diagram page 13

\*\* See L77-4 diagrams page 12

For outline drawing see page 16

**Output specification**

Output configuration	1 NO (SPST-NO)		1 NO (SPST-NO)	
Rated current $I_N$ /Max. peak current* (10 ms) A	30/520*		30/520*	
Rated voltage V AC (50/60 Hz)	400		400	
Switching voltage range V AC (50/60 Hz)	48...480		48...480	
Repetitive peak off-state voltage $V_{pk}$	1100		1100	
Rated load AC7a (cos $\varphi$ = 0.8) A	30		30	
Rated load AC15 A	20		20	
Single phase motor rating (230 V AC) kW	—		1.5	
Nominal lamp rating:				
230 V incandescent/halogen W	6000		4500	
fluorescent tubes with electronic ballast W	6000		4000	
fluorescent tubes with electromechanical ballast W	3000		1800	
CFL W	4000		2500	
230 V LED W	4000		2500	
LV halogen or LED with electronic ballast W	4000		2500	
LV halogen or LED with electromechanical ballast W	4000		2500	
Minimum switching current @ 400 V mA	300		300	
Typical "OFF-state" leakage current @ 400 V mA	1		1	
Max "ON-state" voltage drop @ 25 °C and 30 A V	0.85		0.85	
Power loss @ 30 A W	16		16	

**Input specification**

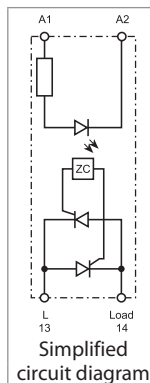
Nominal voltage ( $U_N$ )	V AC (50/60 Hz)	—	230	—	230
	V DC	24	—	24	—
Rated power @ $U_{MAX}$	VA (50 Hz)/W	0.4	7.5/0.9	0.4	7.5/0.9
Operating range	V AC (50/60 Hz)	—	40...280	—	40...280
	V DC	4...32	—	4...32	—
Must drop-out voltage	V AC (50/60 Hz)/DC	—/2	6/—	—/2	6/—

**Technical data**

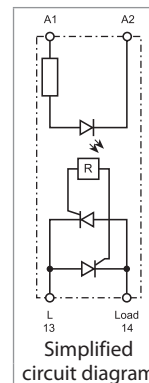
Electrical life	cycles	10 · 10 <sup>6</sup>		10 · 10 <sup>6</sup>	
Operate/release time	ms	< 10/< 10	< 10/< 30	< 1/< 10	< 2/< 25
Insulation between input and output (1.2/50 $\mu$ s)	kV	6		6	
Ambient temperature	°C	-20...+80**		-20...+80**	
Protection category		IP 20		IP 20	

**Approvals** (according to type)**77.31.x.xxx.8050****Zero-crossing switch-on**  
**Suggested applications:**

- Lamp inrush current reduction (CFL - Compact Fluorescent energy-saving Lamps and similar)
- Heater control
- Solenoid, contactor driver

**77.31.x.xxx.8051****Random switch-on****Suggested applications:**

- Finer control requiring short operate time (specially motor control)



**30 A modular SSR, 1 NO output**

- 22.5 mm housing, heat-sink + plastic cover
- 60 to 440 V AC output (with back to back SCR)
- 6 kV (1.2/50 µs) insulation between Input and Output
- Zero-crossing and random switch-on versions available
- High switching speed
- High endurance
- Silent switching
- Spark and bounce-free switching
- Low control power
- 3-phase general purpose
- "Contactor-style" terminal arrangement (input and output terminals on adjacent sides)
- 35 mm rail (EN 60715) mount

77.31

Screw terminal



\* See L77-5 diagram page 13

\*\* See L77-4 diagrams page 12

For outline drawing see page 16

**Output specification**

Output configuration	1 NO (SPST-NO)		1 NO (SPST-NO)	
Rated current $I_N$ /Max. peak current* (10 ms) A	30/520*		30/520*	
Rated voltage V AC (50/60 Hz)	400		400	
Switching voltage range V AC (50/60 Hz)	48...480		48...480	
Repetitive peak off-state voltage $V_{pk}$	1100		1100	
Rated load AC7a (cos φ = 0.8) A	30		30	
Rated load AC15 A	20		20	
Single phase motor rating (230 V AC) kW	—		1.5	
Nominal lamp rating:				
230 V incandescent/halogen W	6000		4500	
fluorescent tubes with electronic ballast W	6000		4000	
fluorescent tubes with electromechanical ballast W	3000		1800	
CFL W	4000		2500	
230 V LED W	4000		2500	
LV halogen or LED with electronic ballast W	4000		2500	
LV halogen or LED with electromechanical ballast W	4000		2500	
Minimum switching current @ 400 V mA	300		300	
Typical "OFF-state" leakage current @ 400 V mA	1		1	
Max "ON-state" voltage drop @ 25 °C and 30 A V	0.85		0.85	
Power loss @ 30 A W	16		16	

**Input specification**

Nominal voltage ( $U_N$ )	V AC (50/60 Hz)	—	230	—	230
	V DC	24	—	24	—
Rated power VA (50 Hz)/W		0.4	7.5/0.9	0.4	7.5/0.9
Operating range	V AC (50/60 Hz)	—	40...280	—	40...280
	V DC	4...32	—	4...32	—
Must drop-out voltage V AC (50/60 Hz)/DC		—/2	6/—	—/2	6/—

**Technical data**

Electrical life cycles		10 · 10 <sup>6</sup>		10 · 10 <sup>6</sup>	
Operate/release time ms		< 10/< 10	< 10/< 30	< 1/< 10	< 2/< 25
Insulation between input and output (1.2/50 µs) kV		6		6	
Ambient temperature °C		-20...+80**		-20...+80**	
Protection category		IP 20		IP 20	

**Approvals** (according to type)



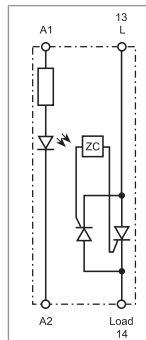
**77.31.x.xxx.8070**



**Zero-crossing switch-on**

**Suggested applications:**

- Lamp inrush current reduction (CFL - Compact Fluorescent energy-saving Lamps and similar)
- Heater control
- Solenoid, contactor driver



Simplified circuit diagram

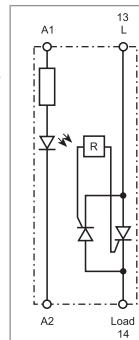
**77.31.x.xxx.8071**



**Random switch-on**

**Suggested applications:**

- Fine controls involving shorter time (specially motor control)



Simplified circuit diagram



**25, 40 And 50 A panel SSR,  
"hockey puck" style**

- "hockey puck" housing with cover
- 24 to 240 V AC output
- Zero-crossing version
- High switching speed
- High endurance
- Silent switching
- Spark and bounce-free switching
- Low control power
- 3-phase general purpose
- "Relay-style" terminal arrangement (input and output terminals on opposite sides)
- Mounting on heatsink with screws

77.x5  
Screw terminal (plate clamp)



- \* See L77-11 diagrams page 13
- \*\* See L77-8, L77-9 and L77-10 diagrams page 13

For outline drawing see page 16

**Output specification**

Output configuration	1 NO (SPST-NO)	1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current $I_N$ /Max. peak current* (10 ms) A	25/300*	40/500*	50/520*
Rated voltage V AC (50/60 Hz)	230	230	230
Switching voltage range V AC (50/60 Hz)	21.6...280	21.6...280	21.6...280
Repetitive peak off-state voltage $V_{pk}$	600	600	600
Nominal lamp rating:			
230 V incandescent/halogen W	2000	4000	6000
fluorescent tubes with electronic ballast W	2000	4000	6000
fluorescent tubes with electromechanical ballast W	1000	2000	3000
CFL W	800	3000	4000
230 V LED W	800	3000	4000
LV halogen or LED with electronic ballast W	800	3000	4000
LV halogen or LED with electromechanical ballast W	1000	3000	4000
Minimum switching current @ 250 V mA	120	250	250
Typical "OFF-state" leakage current @ 250 V mA	10	10	10
Max "ON-state" voltage drop @ 25 °C and $I_N$ V	1.6	1.6	1.6
Power loss @ $I_N$ W	40	64	80

**Input specification**

Nominal voltage ( $U_N$ )	V AC (50/60 Hz)	—	230	—	230	—	230
	V DC	24	—	24	—	24	—
Rated power @ $U_{MAX}$	VA (50 Hz)/W	—/0.6	2.4/—	—/0.6	2.4/—	—/0.6	2.4/—
Operating range	V AC (50/60 Hz)	—	90...280	—	90...280	—	90...280
	V DC	3...32	—	3...32	—	3...32	—
Must drop-out voltage	V AC (50/60 Hz)/DC	—/1	10/—	—/1	10/—	—/1	10/—

**Technical data**

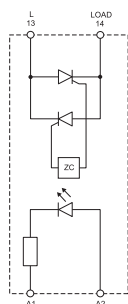
Electrical life	cycles	10 · 10 <sup>6</sup>		10 · 10 <sup>6</sup>		10 · 10 <sup>6</sup>	
Operate/release time	ms	10/10	40/80	10/10	40/80	10/10	40/80
Insulation between input and output (1.2/50 μs)	kV	5.6		5.6		5.6	
Ambient temperature	°C	-30...+80**		-30...+80**		-30...+80**	
Protection category		IP 20		IP 20		IP 20	

Approvals (according to type)


**77.25.x.xxx.8250**

**Zero-crossing switch-on**

- Output: 25 A/230 V AC
- Suggested applications: heater control

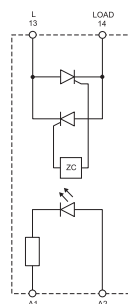


Simplified circuit diagram

**77.45.x.xxx.8250**

**Zero-crossing switch-on**

- Output: 40 A/230 V AC
- Suggested applications: heater control

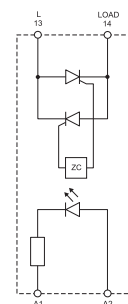


Simplified circuit diagram

**77.55.x.xxx.8250**

**Zero-crossing switch-on**

- Output: 50 A/230 V AC
- Suggested applications: heater control



Simplified circuit diagram



### 25, 40 And 50 A panel SSR, "hockey puck" style

- "hockey puck" housing with cover
- 48 to 600 V AC output
- Zero-crossing version
- High switching speed
- High endurance
- Silent switching
- Spark and bounce-free switching
- Low control power
- 3-phase general purpose
- "Relay-style" terminal arrangement (input and output terminals on opposite sides)
- Mounting on heatsink with screws

77.x5

Screw terminal (plate clamp)



\* See L77-11 diagrams page 13

\*\* See L77-8, L77-9 and L77-10 diagrams page 13

For outline drawing see page 16

#### Output specification

Output configuration	1 NO (SPST-NO)	1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current $I_N$ /Max. peak current* (10 ms) A	25/300*	40/500*	50/520*
Rated voltage V AC (50/60 Hz)	600	600	600
Switching voltage range V AC (50/60 Hz)	43.2...660	43.2...660	43.2...660
Repetitive peak off-state voltage $V_{pk}$	1200	1200	1200
Nominal lamp rating:			
230 V incandescent/halogen W	2000	4000	6000
fluorescent tubes with electronic ballast W	2000	4000	6000
fluorescent tubes with electromechanical ballast W	1000	2000	3000
CFL W	800	3000	4000
230 V LED W	800	3000	4000
LV halogen or LED with electronic ballast W	800	3000	4000
LV halogen or LED with electromechanical ballast W	1000	3000	4000
Minimum switching current @ 250 V mA	120	250	250
Typical "OFF-state" leakage current @ 250 V mA	10	10	10
Max "ON-state" voltage drop @ 25 °C and $I_N$ V	1.6	1.6	1.6
Power loss @ $I_N$ W	40	64	80

#### Input specification

Nominal voltage ( $U_N$ )	V AC (50/60 Hz)	—	230	—	230	—	230
	V DC	24	—	24	—	24	—
Rated power @ $U_{MAX}$	VA (50 Hz)/W	—/0.6	2.4/—	—/0.6	2.4/—	—/0.6	2.4/—
	Operating range V AC (50/60 Hz)	—	90...280	—	90...280	—	90...280
Must drop-out voltage	V DC	4...32	—	4...32	—	4...32	—
	V AC (50/60 Hz)/DC	—/1	10/—	—/1	10/—	—/1	10/—

#### Technical data

Electrical life	cycles	10 · 10 <sup>6</sup>		10 · 10 <sup>6</sup>		10 · 10 <sup>6</sup>	
Operate/release time	ms	10/10	40/80	10/10	40/80	10/10	40/80
Insulation between input and output (1.2/50 μs)	kV	5.6		5.6		5.6	
Ambient temperature	°C	-30...+80**		-30...+80**		-30...+80**	
Protection category		IP 20		IP 20		IP 20	

Approvals (according to type)

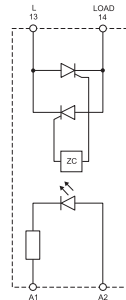


### 77.25.x.xxx.8650



#### Zero-crossing switch-on

- Output: 25 A/600 V AC
- Suggested applications: heater control

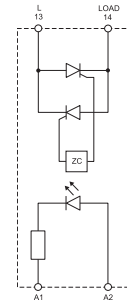


### 77.45.x.xxx.8650



#### Zero-crossing switch-on

- Output: 40 A/600 V AC
- Suggested applications: heater control

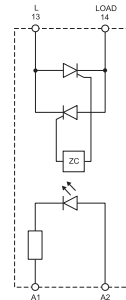


### 77.55.x.xxx.8650



#### Zero-crossing switch-on

- Output: 50 A/600 V AC
- Suggested applications: heater control



## Ordering information

Example: 77 series modular SSR, 1 output 30 A AC, input voltage 230 V AC, relay style terminals arrangement, zero-crossing switch-on.


7 7 . 3 1 . 8 . 2 3 0 . 8 0 5 0

<b>Series</b>	<b>D: Switch-on mode</b>
<b>Type/rated current</b>	0 = Zero-crossing 1 = Random
0 = 5/7/15 A output (77.01)	<b>C: Terminals arrangement</b>
1 = 15 A output (77.11)	5 = "Relay style" (input and output on opposite sides)
2 = 25 A output (77.25)	7 = "Contactor style" (input and output on adjacent sides)
3 = 30 A output (77.31)	<b>AB: Output circuit</b>
4 = 40 A output (77.45)	(rated voltage)
5 = 50 A output (77.55)	80 = 230 V AC (77.01), 400 V AC (77.31)
<b>No. of poles/mounting</b>	82 = 230 V AC (77.11, 77.x5)
1 = 1 pole, modular housing (plastic or heat sink/plastic), DIN rail mounting	86 = 600 V AC (77.x5)
5 = 1 pole, heat-sink or directly panel mounting ("hockey puck")	9024 = 24 V DC
<b>Input version</b>	9125 = 110...125 V DC
0 = DC/AC (50/60 Hz)	
8 = AC (50/60 Hz)	
9 = DC	
<b>Supply voltage</b>	
See "input specification"	

### Codes/Module width

77.01.8.230.8050/17.5 mm 5 A	77.11.8.230.8250/22.5 mm 15 A	77.31.8.230.8050/22.5 mm 30 A	77.25.8.230.8250/hockey puck 25 A
77.01.0.024.8050/17.5 mm 5 A	77.11.9.024.8250/22.5 mm 15 A	77.31.9.024.8050/22.5 mm 30 A	77.25.9.024.8250/hockey puck 25 A
77.01.8.230.8051/17.5 mm 5 A	77.11.8.230.8251/22.5 mm 15 A	77.31.8.230.8051/22.5 mm 30 A	77.25.8.230.8650/hockey puck 25 A
77.01.0.024.8051/17.5 mm 5 A	77.11.9.024.8251/22.5 mm 15 A	77.31.9.024.8051/22.5 mm 30 A	77.25.9.024.8650/hockey puck 25 A
77.01.9.024.9125/17.5 mm 7 A		77.31.8.230.8070/22.5 mm 30 A	77.45.8.230.8250/hockey puck 40 A
77.01.9.024.9024/17.5 mm 15 A		77.31.9.024.8070/22.5 mm 30 A	77.45.9.024.8250/hockey puck 40 A
		77.31.8.230.8071/22.5 mm 30 A	77.45.8.230.8650/hockey puck 40 A
		77.31.9.024.8071/22.5 mm 30 A	77.45.9.024.8650/hockey puck 40 A
			77.55.8.230.8250/hockey puck 50 A
			77.55.9.024.8250/hockey puck 50 A
			77.55.8.230.8650/hockey puck 50 A
			77.55.9.024.8650/hockey puck 50 A

## Technical data

		77.01.8xxx		77.01.9xxx		77.11		77.31		77.25/45/55	
		Dielectric strength	Impulse (1.2/50 µs)	Dielectric strength	Impulse (1.2/50 µs)	Dielectric strength	Impulse (1.2/50 µs)	Dielectric strength	Impulse (1.2/50 µs)	Dielectric strength	Impulse (1.2/50 µs)
Between input and output		2500 V AC	5 kV	3000 V AC	4 kV	3000 V AC	6 kV	3000 V AC	6 kV	4000 V AC	5.6 kV
Between input and ground (heat-sink)		—	—	—	—	3000 V AC	6 kV	3000 V AC	6 kV	4000 V AC	5.6 kV
Between output and ground (heat-sink)		—	—	—	—	2500 V AC	4 kV	4000 V AC	6 kV	4000 V AC	5.6 kV
EMC specifications		Reference standard		77.01.x.xxx		77.11		77.31		77.25/45/55	
		24 V AC/DC 230 V AC		24 V DC		24 V DC 230 V AC		24 V DC 230 V AC		24 V DC - 230 V AC	
Electrostatic discharge	contact discharge	EN 61000-4-2		4 kV		4 kV		4 kV		4 kV	
	air discharge	EN 61000-4-2		8 kV		8 kV		8 kV		8 kV	
Radiated electromagnetic field (80...1000 MHz)		EN 61000-4-3		30 V/m		—		20 V/m		30 V/m	
Fast transients on supply terminals (burst 5/50 ns, 5 and 100 kHz)		EN 61000-4-4		1 kV 4 kV		2 kV		1 kV 3 kV		1 kV 3 kV	
Voltage pulses on supply terminals (surge 1.2/50 µs)	common mode	EN 61000-4-5		2 kV 4 kV		1 kV		3 kV 3 kV		3 kV 3 kV	
	differential mode	EN 61000-4-5		1 kV 4 kV		0.5 kV		0.5 kV 1.5 kV		0.5 kV 1.5 kV	
Radio-frequency common mode voltage (0.15...230 MHz) on supply terminals		EN 61000-4-6		—		10 V		10 V		10 V	
Terminals		77.01.x.xxx		77.01.9.xxx		77.11		77.31		77.25/45/55	
										Input	Output
 Screw torque	Nm	0.8		0.8		0.8		0.8		0.5	1.2
Max. wire size	solid cable	stranded cable		solid cable		stranded cable		solid cable		stranded cable	
	mm <sup>2</sup>	1 x 6/ 2 x 4	1 x 4/ 2 x 25	1 x 6/ 2 x 4	1 x 4/ 2 x 25	1 x 6/ 2 x 4	1 x 6/ 2 x 4	1 x 6/ 2 x 4	1 x 6/ 2 x 4	1 (with ferrule)	4 (with ferrule) 10 (with fork tip)
	AWG	1x10/ 2x12	1x12/ 2x14	1x10/ 2x12	1x12/ 2x14	1x10/ 2x12	1x10/ 2x12	1x10/ 2x12	1x10/ 2x12	18 (with ferrule)	12 (with ferrule) 8 (with fork tip)
Wire strip length	mm	9		9		9		9		10	10
Other data											
Power lost to the environment	without output current	W		0.5		0.5		0.9		0.6	
	with rated current	W		4.0		4.0		14		16	
										40/64/80	

## Input specification

### 77.01

Nominal voltage	Input code	Operating range				Must drop-out voltage (AC/DC)	Input current $I_N$ at $U_N$
		AC		DC			
		$U_{min}$	$U_{max}$	$U_{min}$	$U_{max}$		
$U_N$		V	V	V	V	V	mA
24	<b>0.024</b>	16	32	9.8	32	2.4	25
24	<b>9.024</b>	—	—	4	32	3.0	18
230	<b>8.230</b>	90	265	—	—	24	15

### 77.11

Nominal voltage	Input code	Operating range				Must drop-out voltage (AC/DC)	Input current $I_N$ at $U_N$
		AC		DC			
		$U_{min}$	$U_{max}$	$U_{min}$	$U_{max}$		
$U_N$		V	V	V	V	V	mA
24	<b>9.024</b>	—	—	4	32	2	11
230	<b>8.230</b>	40	305	—	—	6	25

### 77.31

Nominal voltage	Input code	Operating range				Must drop-out voltage (AC/DC)	Input current $I_N$ at $U_N$
		AC		DC			
		$U_{min}$	$U_{max}$	$U_{min}$	$U_{max}$		
$U_N$		V	V	V	V	V	mA
24	<b>9.024</b>	—	—	4	32	2	11
230	<b>8.230</b>	40	280	—	—	6	25

### 77.x5.x.xxx.8250

Nominal voltage	Input code	Operating range				Must drop-out voltage (AC/DC)	Input current $I_N$ at $U_N$
		AC		DC			
		$U_{min}$	$U_{max}$	$U_{min}$	$U_{max}$		
$U_N$		V	V	V	V	V	mA
24	<b>9.024</b>	—	—	3	32	1	22
230	<b>8.230</b>	90	280	—	—	10	20

### 77.x5.x.xxx.8650

Nominal voltage	Input code	Operating range				Must drop-out voltage (AC/DC)	Input current $I_N$ at $U_N$
		AC		DC			
		$U_{min}$	$U_{max}$	$U_{min}$	$U_{max}$		
$U_N$		V	V	V	V	V	mA
24	<b>9.024</b>	—	—	4	32	1	25
230	<b>8.230</b>	90	280	—	—	10	10

### Led indication

LED	Supply voltage
	OFF
	ON

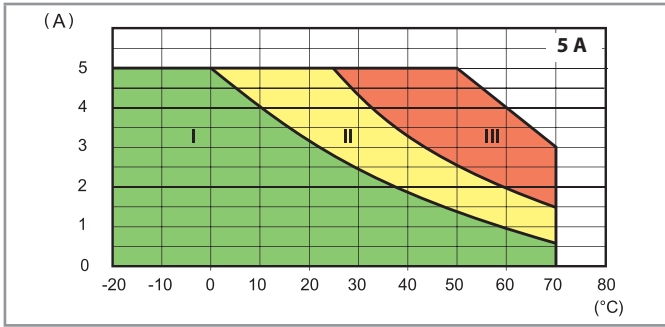
LED (77.01.9.024.9xxx only)	Short circuit*
	NO
	YES

\* To restore normal operation it is necessary to disconnect the power, resolve the short circuit and then restore power.

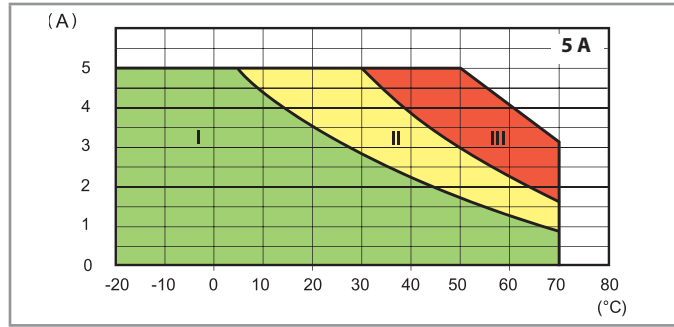
**D**

## Output specification

**L77-1 Output RMS current v ambient temperature**  
77.01.0.024.805x @ 32 V DC



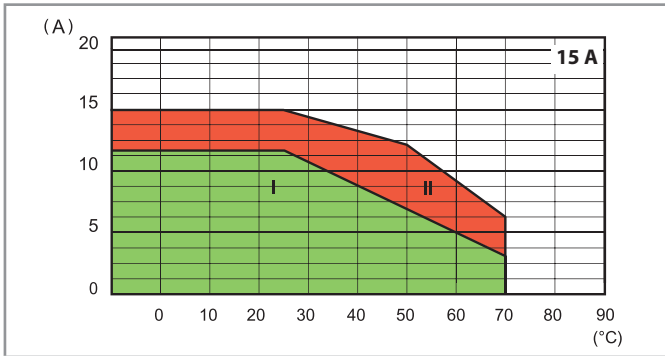
**L77-2 Output RMS current v ambient temperature**  
77.01.8.230.805x @ 265 V AC



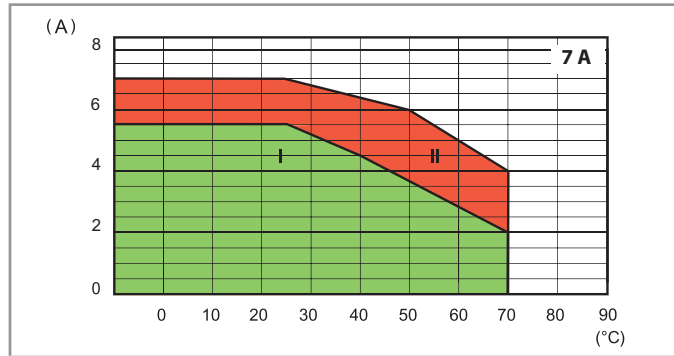
D

- I - Modular SSR installed as a group (without gap)
- II - Modular SSR installed as a group (9 mm gap between each SSR)
- III - Modular SSR installed individually in free air (without a significant influence from nearby components)

**L77-12 Output DC current v ambient temperature**  
77.01.9.024.9024 @ 32 V DC

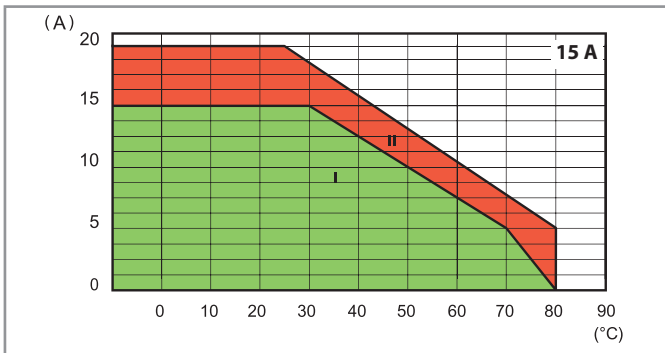


**L77-13 Output DC current v ambient temperature**  
77.01.9.024.9125 @ 32 V DC

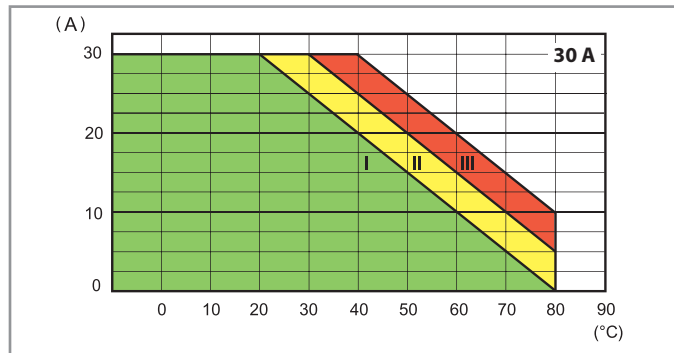


- I - Modular SSR installed as a group (without gap)
- II - Modular SSR installed individually in free air, or with a gap  $\geq 9$  mm, which implies a not significant influence from nearby components

**L77-6 Output RMS current v ambient temperature**  
77.11.x.xxx.82xx



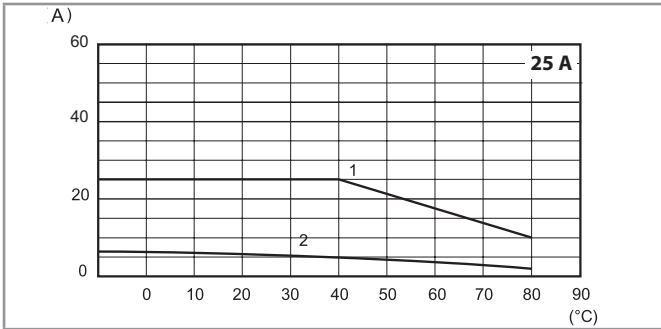
**L77-4 Output RMS current v ambient temperature**  
77.31.x.xxx.80xx



- I - Modular SSR installed as a group (without gap)
- II - Modular SSR installed as a group (20 mm gap between each SSR)
- III - Modular SSR installed individually in free air, or with a gap  $\geq 40$  mm, which implies a not significant influence from nearby components)

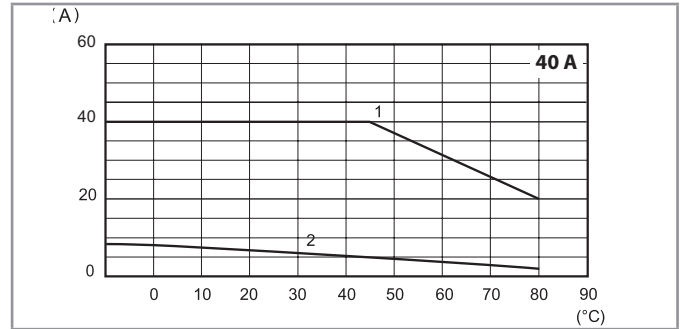
**Output specification**

**L77-10 Output RMS current v ambient temperature**  
77.25.x.xxx.8x50



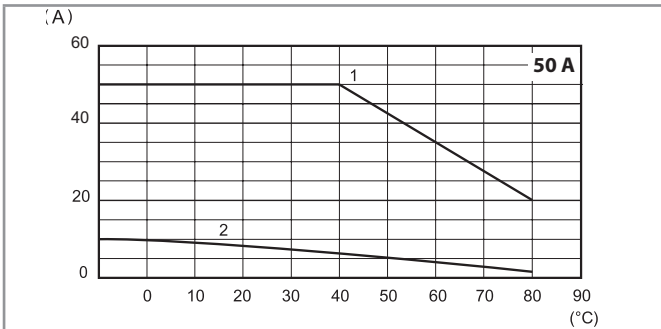
- 1 - Installation on 077.25 heat-sink (2 K/W)
- 2 - Installation individually in free-air

**L77-9 Output RMS current v ambient temperature**  
77.45.x.xxx.8x50



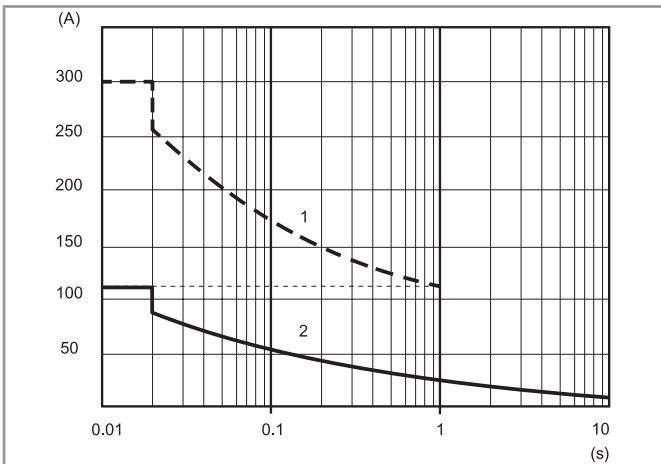
- 1 - Installation on 077.55 heat-sink (0.9 K/W)
- 2 - Installation individually in free-air

**L77-8 Output RMS current v ambient temperature**  
77.55.x.xxx.8x50

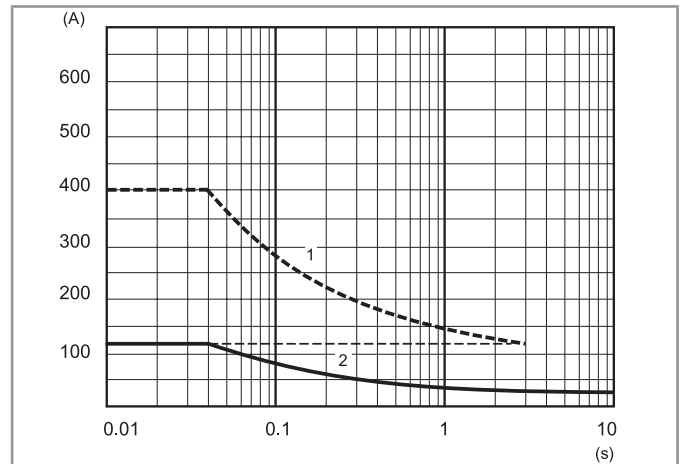


- 1 - Installation on 077.55 heat-sink (0.9 K/W)
- 2 - Installation individually in free-air

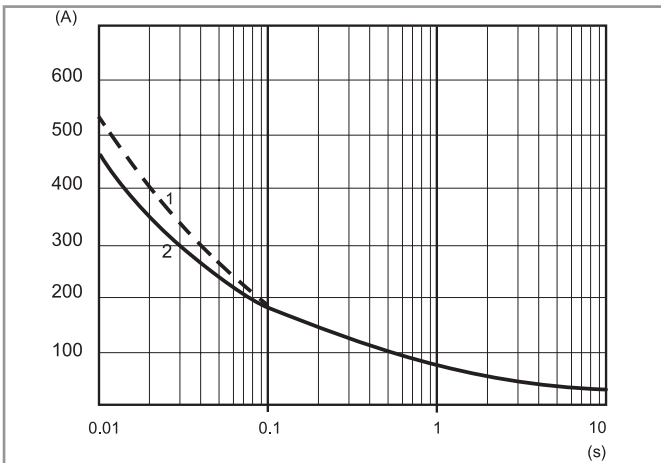
**L77-3 Inrush peak current (AC) v inrush time**  
77.01.x.xxx.80xx



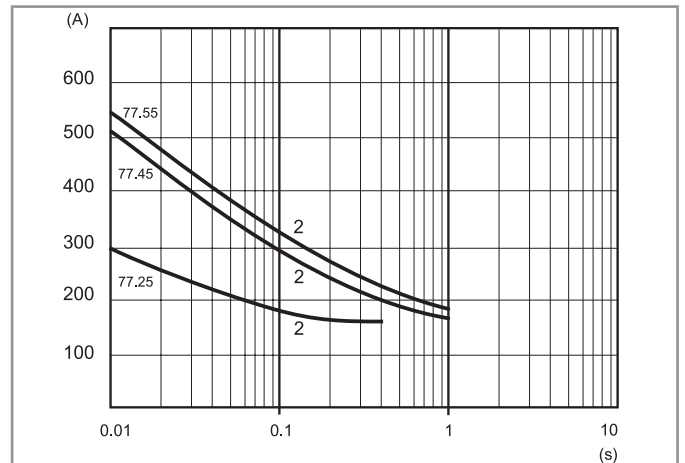
**L77-7 Inrush peak current (AC) v inrush time**  
77.11.x.xxx.82xx



**L77-5 Inrush peak current (AC) v inrush time**  
77.31.x.xxx.80xx



**L77-11 Inrush peak current (AC) v inrush time**  
77x5.x.xxx.8x50



- 1 - "Cold" conditions (ambient temperature = 23 °C, no output current during the last 15 minutes)
- 2 - "Hot" conditions (ambient temperature = 50 °C, rated output current)

## Output specification

Max recommended switching frequency (Cycles/Hour, with 50% Duty-cycle)							
Load	77.01.8xxx	77.01.9xxx	77.11	77.31	77.25	77.45	77.55
5 A 230 V (AC1)	5000	—	—	—	—	—	—
5 A 24 V DC L/R = 20 ms	—	3600	—	—	—	—	—
1 A (AC15)	10000	—	—	—	—	—	—
0.5 A (AC15)	20000	—	—	—	—	—	—
15 A 305 V $\cos \varphi = 0.8$	—	—	1800	—	—	—	—
15 A 305 V $\cos \varphi = 0.5$	—	—	1200	—	—	—	—
30 A 480 V $\cos \varphi = 0.8$	—	—	—	1800	—	—	—
30 A 480 V $\cos \varphi = 0.5$	—	—	—	1200	—	—	—
25 A 230 V $\cos \varphi = 0.7$	—	—	—	—	1800	—	—
40 A 230 V $\cos \varphi = 0.7$	—	—	—	—	—	1800	—
50 A 230 V $\cos \varphi = 0.7$	—	—	—	—	—	—	1800

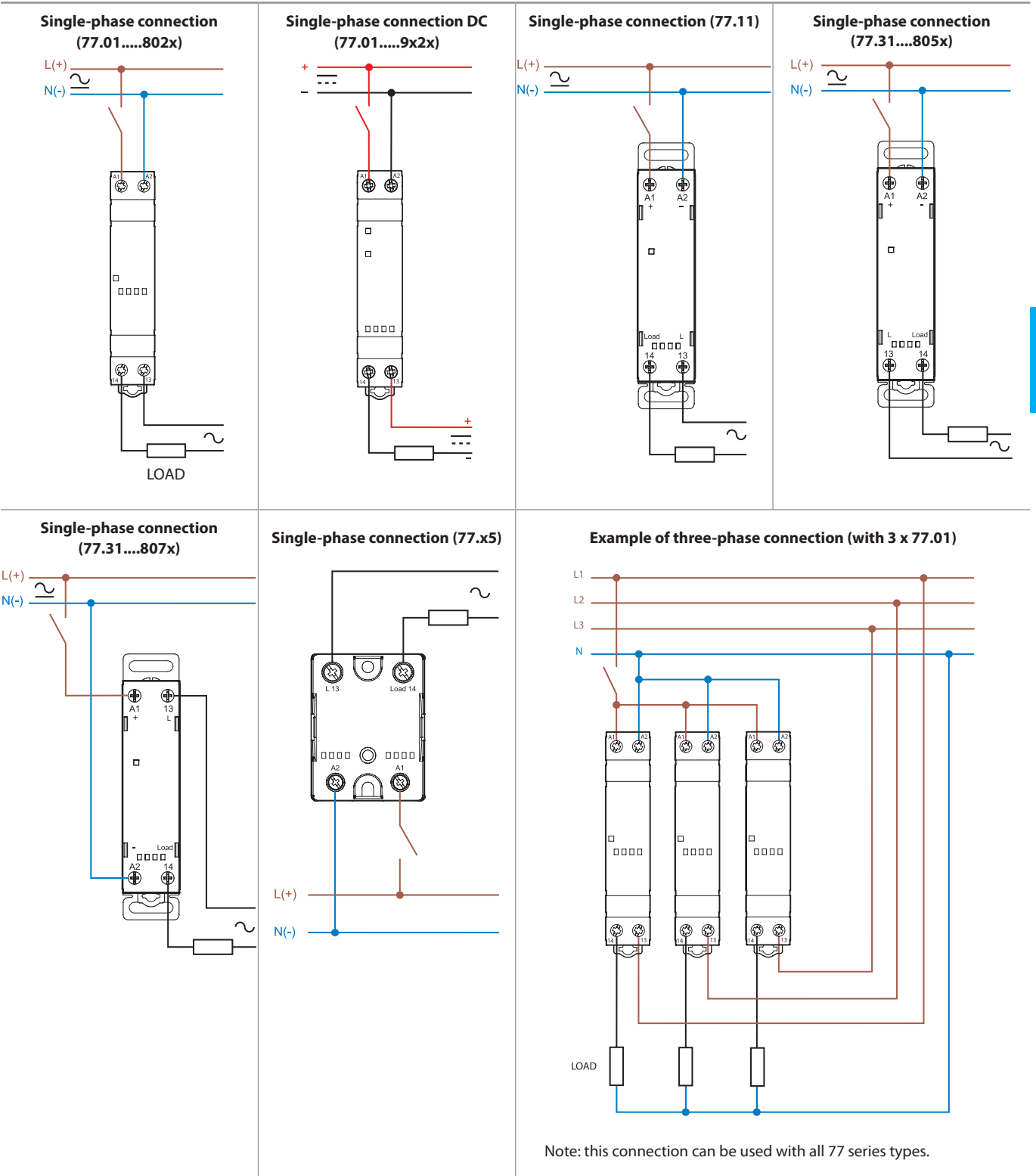
Other data							
	77.01.8xxx	77.01.9xxx	77.11	77.31	77.25	77.45	77.55
<b>Critical rising voltage</b> dv/dt without input control (gate open) @ $T_j = 125^\circ\text{C}$	> 1000 V/ $\mu\text{s}$	> 1000 V/ $\mu\text{s}$	> 500 V/ $\mu\text{s}$ > 10 V/ $\mu\text{s}$ (with di/dt = 20 A/ms)	> 1000 V/ $\mu\text{s}$	300 V/ $\mu\text{s}$ (.8250)  500 V/ $\mu\text{s}$ (.8650)	500 V/ $\mu\text{s}$ (.8250)  1000 V/ $\mu\text{s}$ (.8650)	1000 V/ $\mu\text{s}$ (.8250)  1000 V/ $\mu\text{s}$ (.8650)
<b>Critical rising current</b> di/dt @ $T_j = 125^\circ\text{C}$	> 50 A/ $\mu\text{s}$	> 50 A/ $\mu\text{s}$	> 50 A/ $\mu\text{s}$	> 150 A/ $\mu\text{s}$	—	—	—
<b>I<sup>2</sup>t for fusing</b> @ $t_p = 10\text{ ms}$	450 A <sup>2</sup> s	450 A <sup>2</sup> s	1000 A <sup>2</sup> s*	1350 A <sup>2</sup> s**	450 A <sup>2</sup> s	1250 A <sup>2</sup> s	1350 A <sup>2</sup> s

Suggested fuse (depending on application) for short-circuit protection (Ultra-Fast acting types for semiconductors):

\* 20 A, 660 V AC, 10 x 38 mm, 200 kA, 360 A<sup>2</sup>s.

\*\* 30 A, 660 V AC, 10 x 38 mm, 200 kA, 1000 A<sup>2</sup>s.

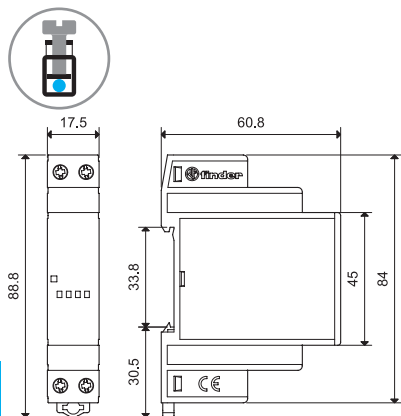
**Wiring diagrams**



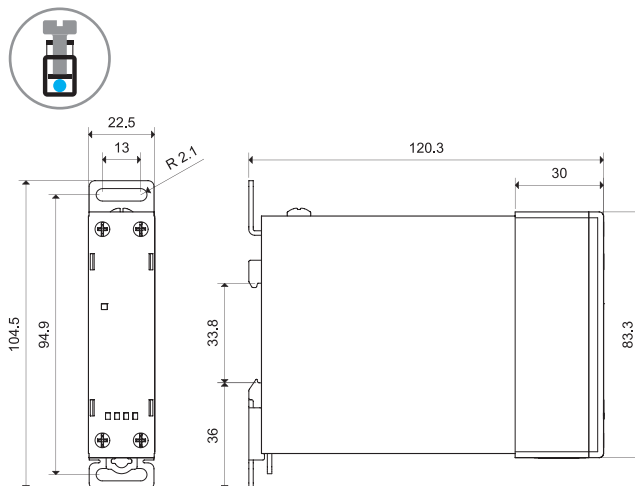


### Outline drawings

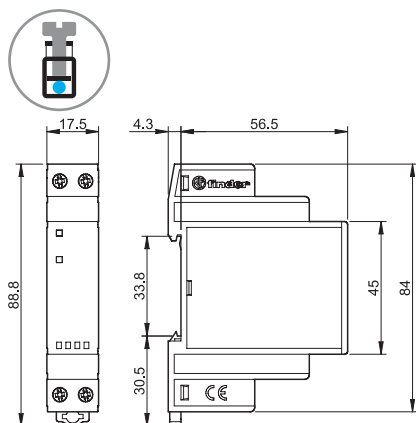
Type 77.01  
Screw terminal



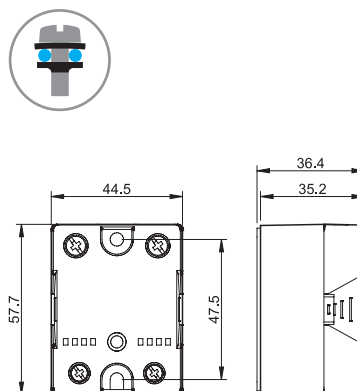
Types 77.11/31  
Screw terminal



Type 77.01 DC  
Screw terminal



Type 77.x5  
Screw terminal (plate clamp)

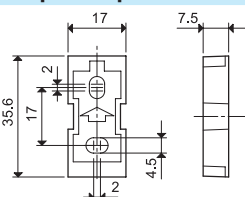


### Accessories



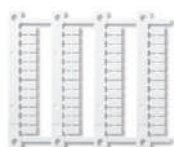
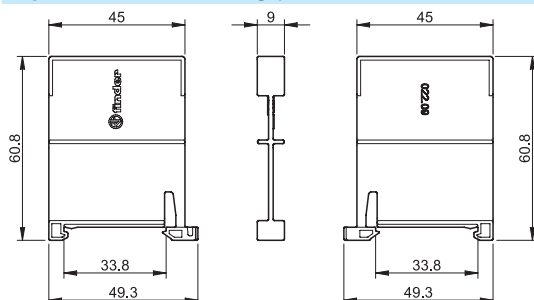
Adaptor for panel mounting, plastic, 17.5 mm wide for 77.01 only

020.01



Separator for rail mounting, plastic, 9 mm wide

022.09



Sheet of marker tags (CEMBRE Thermal transfer printers) for all relays (48 tags), 6 x 12 mm

060.48

060.48

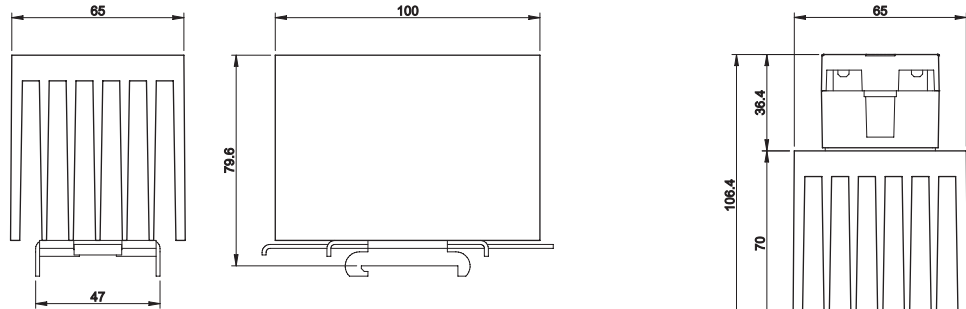
**Accessories**



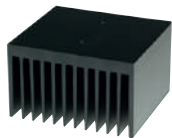
**077.25**

**Heat-sink, anodized aluminium, 2 K/W, 65 x 100 mm, for 77.25 only** | 077.25

- Both the SSR and 35 mm rail clip mount to the heat-sink using M4 screws (supplied with heat-sink)
- Before assembling to the heat-sink, it is necessary to apply a thin and even layer of thermal conductive paste (not supplied) to the lower metal surface of the SSR



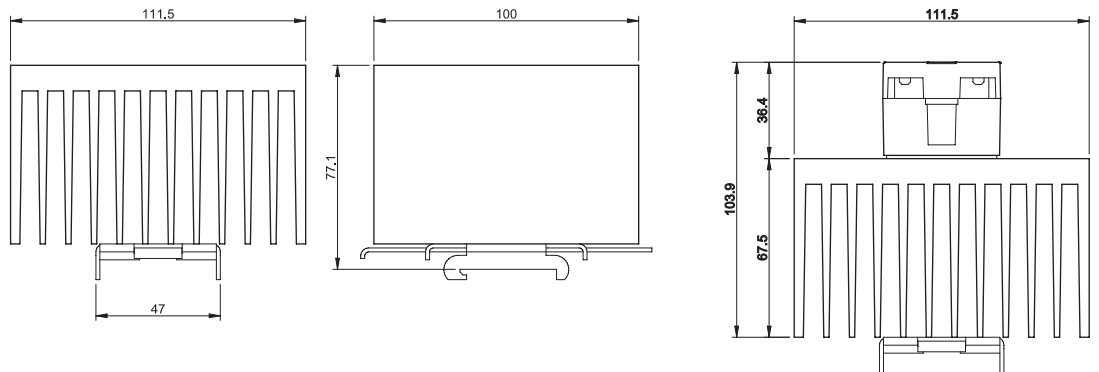
077.25 with 77.25



**077.55**

**Heat-sink, anodized aluminium, 0.9 K/W, 111 x 100 mm, for 77.45 and 77.55** | 077.55

- Both the SSR and 35 mm rail clip mount to the heat-sink using M4 screws (supplied with heat-sink)
- Before assembling to the heat-sink, it is necessary to apply a thin and even layer of thermal conductive paste (not supplied) to the lower metal surface of the SSR



077.55 with 77.45/55



