

1 Unidrive SPMC (rectifier)

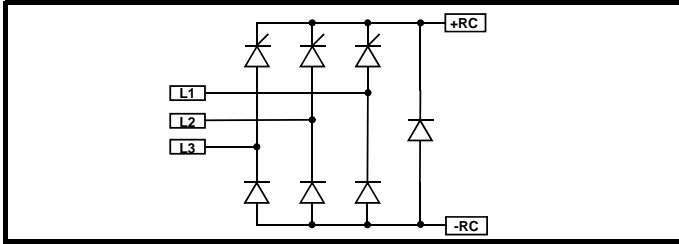
Please refer to the *Unidrive SPM User Guide* for full details of the Unidrive SPMC (rectifier) product.

1.1 Introduction

The Unidrive SPMC is a controlled thyristor rectifier.

1.1.1 SPMC1402 - Single half controlled thyristor rectifier

Figure 1-1 Single half controlled thyristor



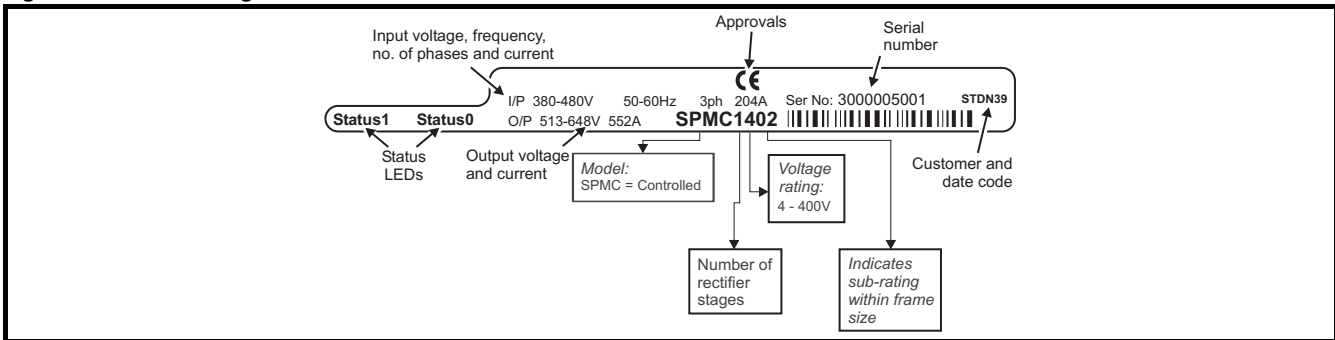
The half controlled thyristor bridge is used as a front end to the SPMD inverter module or as a stand alone rectifier for several smaller drives. Soft-start is built in. An external 24V, 3A power supply is required in addition to the AC supply to allow the rectifier to operate. Control wiring is required between the rectifier and motoring drive(s) so that if the rectifier indicates a fault the motoring drive(s) will be disabled.

The 24V supply must be protected using a 4A slow-blow fuse, one for each supply pole.

Control connections to the Unidrive SPMC should be made with 0.5mm² cable.

The status relay contacts are rated for switching non-inductive loads at 250Vac 6A non-inductive, up to 4Adc if the voltage is limited to 40V or up to 400mA dc if the voltage is limited to 250Vdc. Protection from overcurrent must be provided.

Figure 1-2 SPMC rating label



1.2 Unidrive SPMC technical data

Table 1-1 Unidrive SPMC 400V input current, fuse and cable size ratings

Model	Typical input current	Continuous DC output current	Fuses: HRC AND Semi-conductor		Cable size (per input)				Recommended Inverter
			HRC IEC class gG UL class J	Semi-conductor IEC class aR	AC input		DC output cable		
			A	A	mm ²	AWG	mm ²	AWG	
SPMC1402	339	379	400	400	2 x 120	2 x 4/0	2 x 120	2 x 4/0	SPMD1401 to 1404



WARNING: The user must provide a means of preventing live parts from being touched. A cover around the electrical connections at the top of the inverter and the bottom of the rectifier where the cables enter is required.

WARNING: Input fuses as specified must be provided.

WARNING: The Unidrive SPMC depends on the drive for protection. Status outputs must be linked to the drive enable circuit to ensure that when the rectifier indicates a fault the motoring drive(s) is disabled.

CAUTION: A separate input line reactor of at least the value shown in Table 1-2 must be used with the rectifiers. Failure to provide sufficient reactance could damage or reduce the service life of the rectifier or inverter.

Table 1-2 400V line reactor ratings

Model	Inverter	Voltage V	Current A	Inductance μH	Length mm	Depth mm	Height mm	Weight kg	Quantity required	Part No.
INL401	SPMD1401/2	400	233	63	230	160	230	32	1	4401-0181-00
INL402	SPMD1403/4	400	339	44	260	170	230	36	1	4401-0182-00

Figure 1-3 Accessories supplied with SPMC

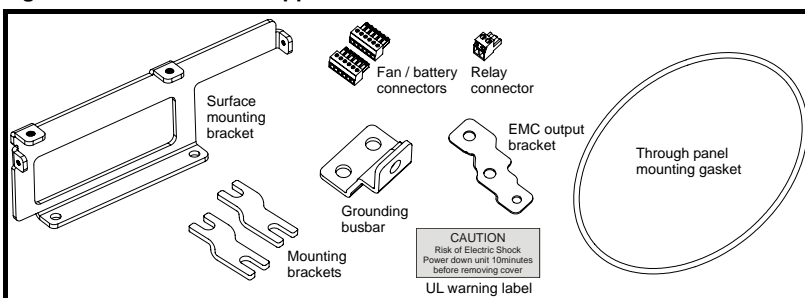


Table 1-3 Key to SPMC/U (rectifier) LEDs

Status Output		Meaning
1: Left LED	0: Right LED	
OFF	OFF	Supply off
OFF	ON	Phase loss
ON	OFF	Any of the following: <ul style="list-style-type: none"> • Snubber overheating due to excessive cable charging current or supply notching • Rectifier heatsink over temperature • Rectifier PCB over temperature • Status input wire break
ON	ON	System healthy



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Figure 1-4 Surface mounting the Unidrive SPMC (rectifier)

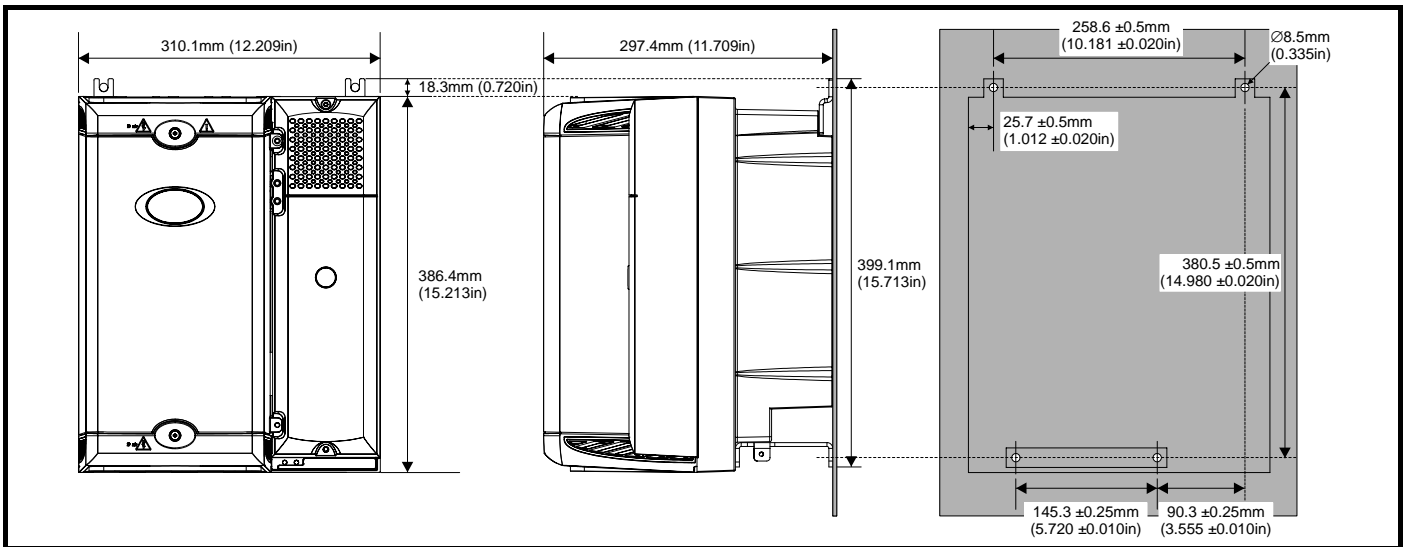


Figure 1-5 Through-panel mounting the Unidrive SPMC (rectifier)

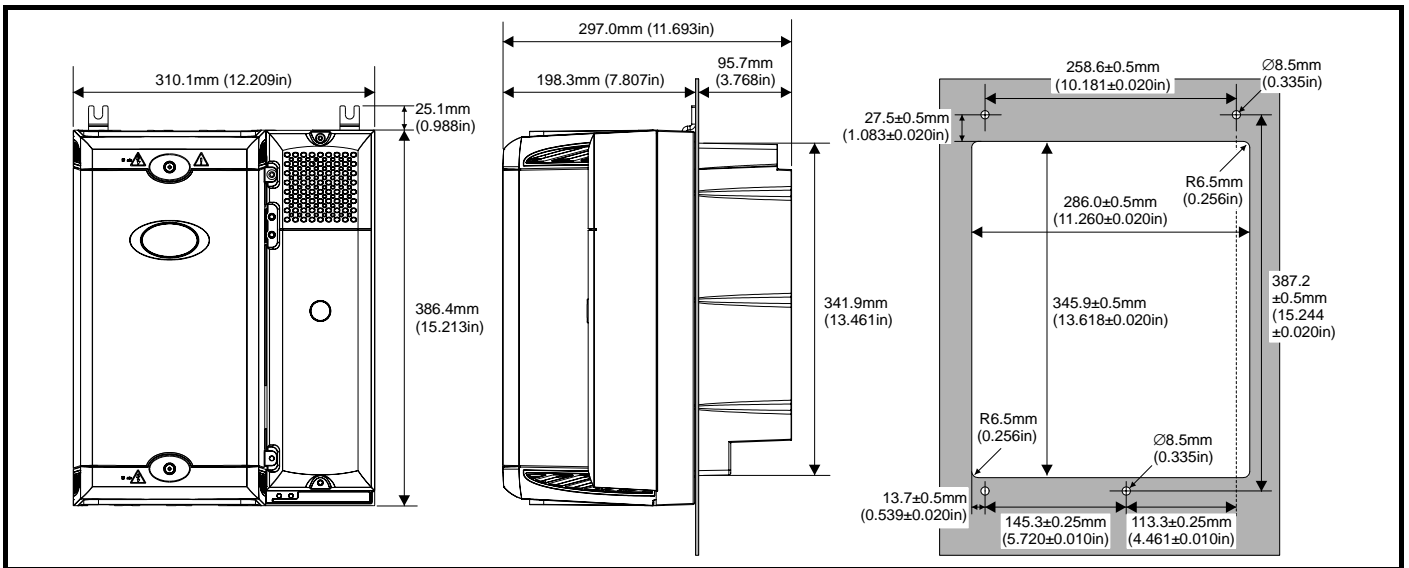


Figure 1-6 Location of control terminals

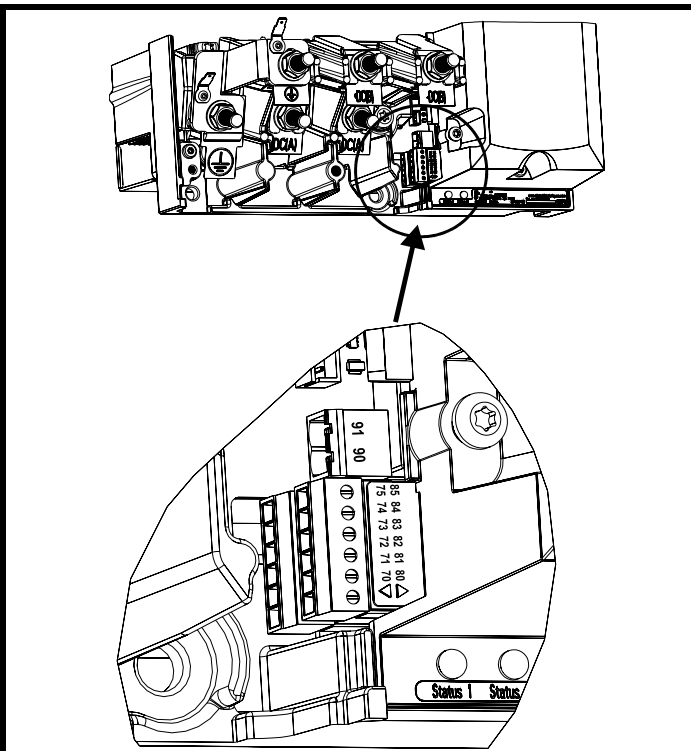


Figure 1-7 Single rectifier control terminals and descriptions

