Renishaw Servo Power Amplifier SPA2-2

Category: Renishaw Controllers

SPA2-2
The SPA2 is a 4-channel digital servo power amplifier with an integral power supply.

SPA2-2 has been optimised to work with the UCC range CMM controller and MCU5-2 joystick, together forming an ideal retrofit package.

Key features:

- For each amplifier channel, there are individual software controls for all the tuning parameters including offset, gain, integral and proportional settings
- Motor and tacho polarities can be inverted by software
- Power supply can be set to provide a voltage output from 12 V to 60 V
- Maximum total output power is 600 W
- Each channel can deliver 10 A peak or 5 A continuous
- As well as the servo power amplifiers, SPA2-2 contains all the relays to control the motor engaging process. It also contains all the necessary hardware to implement a category '2' emergency stop system

Technical specification
- Standard specification

- Not available

* Output voltage should approximately match input voltage

	SPA2-2 (3-axis) *	SPA3-2
UCC controller compatibility	UCC BI	UCC T3-2, UCC T3 PLUS, UCC S3, UCC T5 or UCC S5
Servo amplifier channels	3	3
Additional servo amplifier channels	1	Second amplifier required
Total output power	600 W	960 W max. (PSU dependent)
Maximum continuous power per channel	300 W (1)	800 W (PSU dependent)
Peak power per channel (dependent on application)	600 W	960 W (PSU dependent)
Amplifier output (motor) voltage	Brushless motors 12 V to 60 V	12 V to 80 V variable **
Amplifier current	0 A to 10 A programmable	0 A to 10 A programmable
Emergency stop compatibility	Category '2' E-STOP (PL-b)	Category '2' E-STOP (PL-b)
Tuning method	Digital	Digital
DC brushless motor compatibility	▪	
DC brushed motor compatibility		▪
Encoder velocity feedback	▪	▪
Tacho motor velocity feedback	▪	▪
Tacholess velocity feedback	▪	▪
Encoder velocity feedback	▪	▪
AC power supply	Integral	External
Power supply - input	85 V to 132 V ac, 170 V to 264 V ac, 47 Hz to 63 Hz, 650 W	PSU dependent
Environment - storage	-10 °C to +70 °C (+14 °F to +158 °F)	-10 °C to +70 °C (+14 °F to +158 °F)
Environment - operation	+10 °C to +50 °C (+50 °F to +122 °F) local to UCC	+5 °C to +50 °C (+41 °F to +122 °F) local to UCC
Dimensions:		
Width	435 mm (19 in enclosure)	440 mm (19 in enclosure)
Height	3U (127 mm)	1U (44 mm)
Depth	330 mm	180 mm
Weight	9.48 kg (20 lb 14 oz) (maximum - 7-axis system)	2.84 kg (6 lb 4 oz)

Kit	Kit contents	Notes
SPA2-2 kit 3-axis dc	3-axis kit including cables	3-axis configuration suitable for conventional CMMs fitted with brushed dc motors. It can accommodate both tacho and tacholess velocity feedback systems and, with the addition of an encoder interface card, it can also accommodate encoder velocity feedback. An additional card can be fitted to extend these units to a 4-axis system.
SPA2-2 6-axis dc kit	Configuration suitable for installations requiring between five or six amplifiers.	Like the 3-axis version, these can accommodate both tacho and tacholess velocity feedback systems and, with the addition of encoder interface cards, can also accommodate encoder velocity feedback. An additional axis card can be fitted to extend this unit to a 7-axis system.
SPA2-2 3-axis + REVO kit	Configured to support a REVO 5-axis scanning head, with 3 axes available for CMM control.	Can be increased to four CMM axes with the use of an additional card.
SPA2-2 4th axis interface card	Plug-in board which can be fitted to provide an additional axis for the 3-axis, 6-axis or 3-axis + REVO kits	The motor connector on this card is a type that will support a brushless or linear motor and is not the same as the standard brushed motor connector. To avoid supply problems a mating plug and backshell is included as part of the kit.
Scale / encoder kit	4 off 15 W HDD plugs and backshells to support the connection of either the UCC axis scale inputs or the SPA motor encoder inputs.	For connectors to support a UCC / SPA2-2 system on a CMM fitted with encoder velocity feedback, then two of these kits will be required.
SPA2-2 connector kit	3 off 7W2 type plugs for the motor / tacho connections. 1 off 9W D type socket for the emergency stop. Appropriate backshells for each motor connector.	Connectors and backshells to support the connection of the axis motors and the machine emergency stop system.