Control Techniques | Emerson UNIDRIVE SP Variable Speed AC Drives Fieldbus SP Solution Modules and Keypads

Part #	Part #
SM-LON	SM-Ethernet
SM-PROFIBUS-DP	SM-EtherCAT
SM-INTERBUS	SM-SLM
SM-CAN	SP0 Keypad
SM-DeviceNet	SM-Keypad
SM-CANopen	SM-Keypad Plus
SM-SERCOS	1220-2756-01 / 1220-2758-01

Presented by – MRO Electric & Supply Company
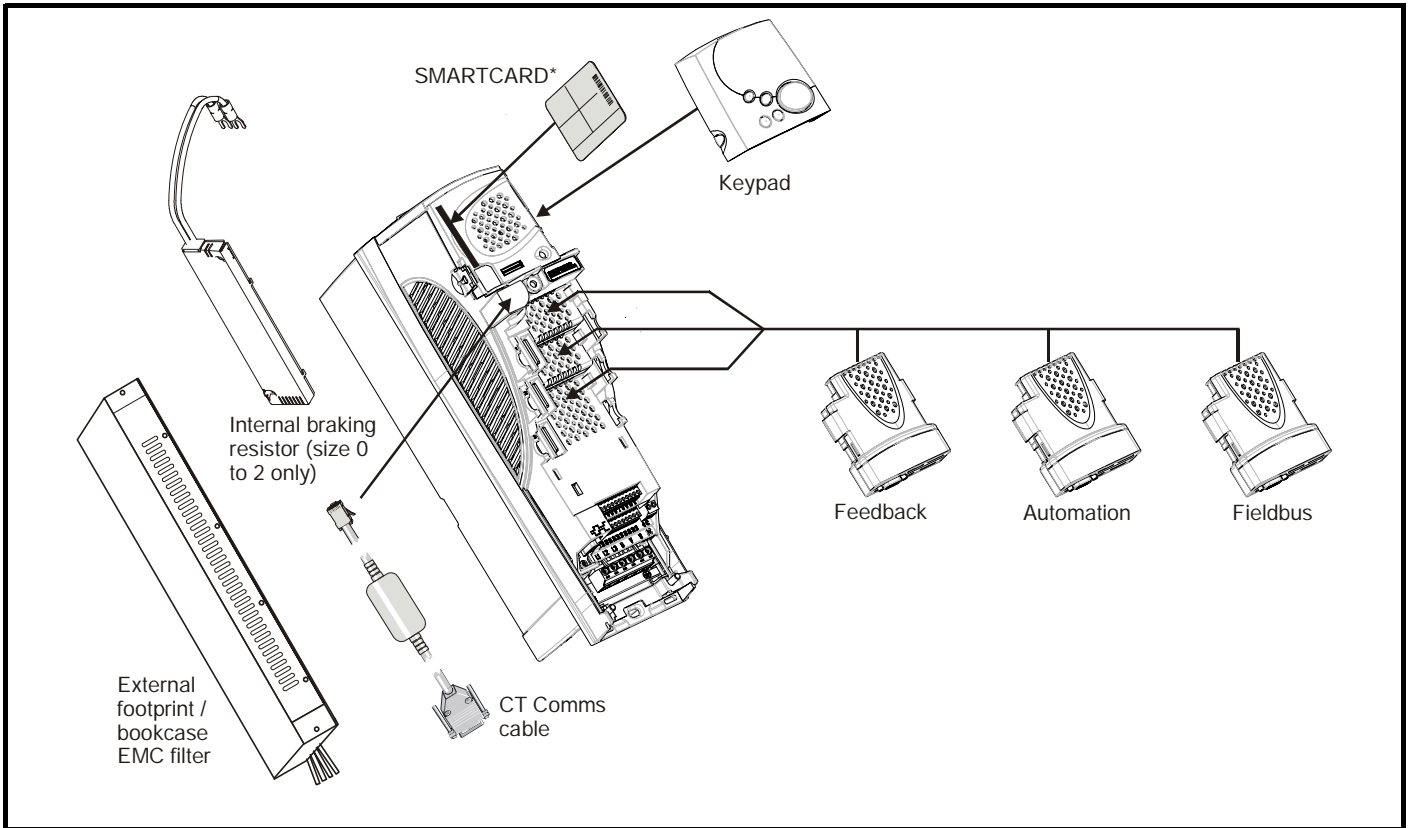
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2.7 Options

Figure 2-5 Options available with Unidrive SP

* A SMARTCARD is provided as standard. For further information, refer to Chapter 9 *SMARTCARD operation* on page 143.

All Solutions Modules are color-coded in order to make identification easy. The following table shows the color-code key and gives further details on their function.

Table 2-8 Solutions Module identification

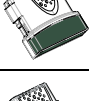| Type	Solutions Module	Color	Name	Further Details
Feedback		Light Green	SM-Universal Encoder Plus	**Universal Feedback interface** Feedback interface for the following devices: **Inputs** • Incremental encoders • SinCos encoders • SSI encoders • EnDat encoders **Outputs** • Quadrature • Frequency and direction • SSI simulated outputs
		Light Blue	SM-Resolver	**Resolver interface** Feedback interface for resolvers. Simulated quadrature encoder outputs
		Brown	SM-Encoder Plus	**Incremental encoder interface** Feedback interface for incremental encoders without commutation signals. No simulated encoder outputs available
		Dark Brown	SM-Encoder Output Plus	**Incremental encoder interface** Feedback interface for incremental encoders without commutation signals. Simulated encoder output for quadrature, frequency and direction signals
		N/A	15-way D-type converter	**Drive encoder input converter** Provides screw terminal interface for encoder wiring and spade terminal for shield
		N/A	Single ended encoder interface (15V or 24V)	**Single ended encoder interface** Provides an interface for single ended ABZ or UVW encoder signals, such as those from hall effect sensors. 15V and 24V versions are available.

Table 2-8   Solutions Module identification

Type	Solutions Module	Color	Name	Further Details
Automation (I/O Expansion)		Yellow	SM-I/O Plus	**Extended I/O interface** Increases the I/O capability by adding the following to the existing I/O in the drive: • Digital inputs x 3 • Analog output (voltage) x 1 • Digital I/O x 3 • Relay x 2 • Analog inputs (voltage) x 2
		Yellow	SM-I/O 32	**Extended I/O interface** Increase the I/O capability by adding the following to the existing I/O in the drive: • High speed digital I/O x 32 • +24V output
		Dark Yellow	SM-I/O Lite	**Additional I/O** 1 x Analog input (± 10V bi-polar or current modes) 1 x Analog output (0-10V or current modes) 3 x Digital input and 1 x Relay
		Dark Red	SM-I/O Timer	**Additional I/O with real time clock** As per SM-I/O Lite but with the addition of a Real Time Clock for scheduling drive running
		Turquoise	SM-I/O PELV	**Isolated I/O to NAMUR NE37 specifications** For chemical industry applications 1 x Analog input (current modes) 2 x Analog outputs (current modes) 4 x Digital input / outputs, 1 x Digital input, 2 x Relay outputs
		Olive	SM-I/O 120V	**Additional I/O conforming to IEC 61131-2 120Vac** 6 digital inputs and 2 relay outputs rated for 120Vac operation
		Cobalt Blue	SM-I/O 24V Protected	**Additional I/O with overvoltage protection up to 48V** 2 x Analog outputs (current modes) 4 x Digital input / outputs, 3 x Digital inputs, 2 x Relay outputs
Automation (Applications)		Dark Green	SM-Applications	**Applications Processor (with CTNet)** 2nd processor for running pre-defined and /or customer created application software with CTNet support
		White	SM-Applications Lite	**Applications Processor** 2nd processor for running pre-defined and /or customer created application software
		Dark Blue	SM-EZMotion	**Motion Controller** $1^{1}/_{2}$ axis motion controller with processor for running customer created application specific software
		Moss Green	SM-Applications Plus	**Applications Processor (with CTNet)** 2nd processor for running pre-defined and /or customer created application software with CTNet support. Enhanced performance over SM-Applications
		White	SM-Applications Lite V2	**Applications Processor** 2nd processor for running pre-defined and /or customer created application software. Enhanced performance over SM-Applications Lite

Table 2-8   Solutions Module identification

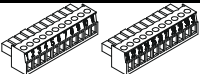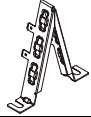| Type	Solutions Module	Color	Name	Further Details
Fieldbus		Purple	SM-PROFIBUS-DP	**Profibus option** PROFIBUS DP adapter for communications with the drive
		Medium Grey	SM-DeviceNet	**DeviceNet option** Devicenet adapter for communications with the drive
		Dark Grey	SM-INTERBUS	**Interbus option** Interbus adapter for communications with the drive
		Pink	SM-CAN	**CAN option** CAN adapter for communications with the drive
		Light Grey	SM-CANopen	**CANopen option** CANopen adapter for communications with the drive
		Red	SM-SERCOS	**SERCOS option** Class B compliant. Torque velocity and position control modes supported with data rates (bit/s): 2MB, 4MB, 8MB and 16MB. Minimum 250μs network cycle time. Two digital high speed probe inputs 1μs for position capture
		Beige	SM-Ethernet	**Ethernet option** 10 base-T / 100 base-T; Supports web pages, SMTP mail and multiple protocols: DHCP IP addressing; Standard RJ45 connection
		Brown Red	SM-EtherCAT	**EtherCAT option** EtherCAT adapter for communications with the drive
		Pale Green	SM-LON	**LonWorks option** LonWorks adapter for communications with the drive
SLM		Orange	SM-SLM	**SLM interface** The SM-SLM allows SLM feedback to be connected directly to the Unidrive SP drive and allows operation in either of the following modes: • Encoder only mode • Host mode
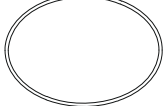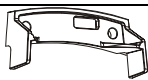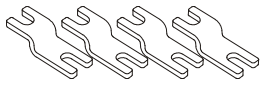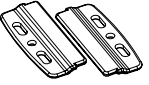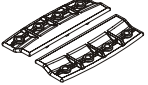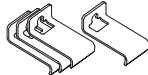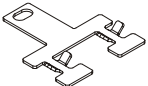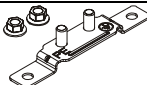
Table 2-9   Keypad identification

Type	Keypad	Name	Further Details
Keypad		SP0 Keypad	**LED keypad option** Keypad with a LED display for size 0
		SM-Keypad	**LED keypad option** Keypad with a LED display for size 1 to 9
		SM-Keypad Plus	**LCD keypad option** Keypad with an alpha-numeric LCD display with Help function

2.8 Items supplied with the drive

The drive is supplied with a printed manual, a SMARTCARD, a safety information booklet, the Certificate of Quality, an accessory kit box including the items shown in Table 2-10, and a CD ROM containing all related product documentation and software tools.

Table 2-10 Parts supplied with the drive

Description	Size 0	Size 1	Size 2	Size 3	Size 4	Size 5	Size 6
Control connectors							
Relay connector							
UL warning label			CAUTION Risk of Electric Shock Power down unit 10minutes before removing cover				
Grounding bracket							
Through panel mounting gasket							
Through panel mounting bracket							
Surface mounting brackets							
Top surface mounting brackets							
Nylon washers		M6	M6	M6		M8 M6	
Sealing clips							
Mounting screws						M8x20	
Grounding clamp							
Ground cable bridge and M5 nuts							
DC terminal cover grommets							
Ferrite ring							
Supply and motor connector							
Ground mounting screws	M6x12						
Fan supply connector							
IP54 gasket							
IP54 insert							