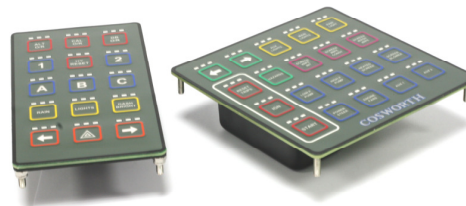


Membrane Switch Panel (MSP)

The Cosworth MSP is a fully customised membrane switch panel supporting up to 20 momentary push button switches in a variety of combinations, with the option of having an embossed outline around the edge of any button.

Also available as an option is an Electro Luminescent (EL) backlight. This illuminates each switch allowing the push buttons to be seen at night. The open/closed state of the push buttons is transmitted over CAN at 100Hz. There are 3 independently controlled LEDs to show the status of each button.

The identification of each CAN packet defaults to values which are compatible with the existing Cosworth range of products including ECUs and Hyllus Power Management Unit. The CAN identification addresses are stored in non-volatile memory and can be changed by using the MSP



configuration menu which is available via the RS232 interface.

The MSP also supports 4 external digital inputs which have an internal pull-up resistor to +5V. The state of these inputs is transmitted by the MSP over CAN at 100Hz.

Specifications

Electrical Data	
Supply voltage	+6.5V to +33V reverse voltage protected
Supply current	55mA @ 12V with all LEDs and backlight off.
	110mA @ 12V with all LEDs on. Backlight 50mA @ 12V
Temperature (Operational)	
• Without EL backlight	-30 °C to +70 °C
• With EL backlight	-20 °C to +60 °C
Temperature (storage)	-20 °C to +70 °C
Maximum number of switches	20
Maximum number of LEDs	60
Digital Inputs	4
CAN	1Mbit, 512k, 256k, 128k software selectable
CAN termination	120R software selectable
Serial Port (debug/configuration)	RS232

Mechanical Data	
Size	Depends upon configuration (see page 3)
Weight	Approx. 140 grams
Environmental	IP54

Ordering Information

Part Number	
MSP20-5x4 without backlight	01D-620010-x
MSP20-5x4-EL (with backlight)	01D-620011-x
MSP15-3x5 without backlight	01D-620012-x
MSP15-3x5-EL (with backlight)	01D-620013-x

The letter 'x' at the end of the part number is the panel design variant. Customer variants are available, please contact Cosworth Sales for details.

Connector Information

MSP Connector	Mating Connector
AS210-35PN	AS610-35SN

Connector Pinout

Pin	Function	Description
1	DIN3	Digital input with +5V pull-up
2	DIN4	Digital input with +5V pull-up
3	0V	MSP 0V reference
4	DIN1	Digital input with +5V pull-up
5	DIN2	Digital input with +5V pull-up
6	CANH	
7	SERTX	RS232 data from MSP

Pin	Function	Description
8	SERRX	RS232 data to MSP
9	BATT+	+ve supply
10	BATT-	-ve supply
11	0V	MSP 0V reference
12	CANL	
13	N/C	Do not connect

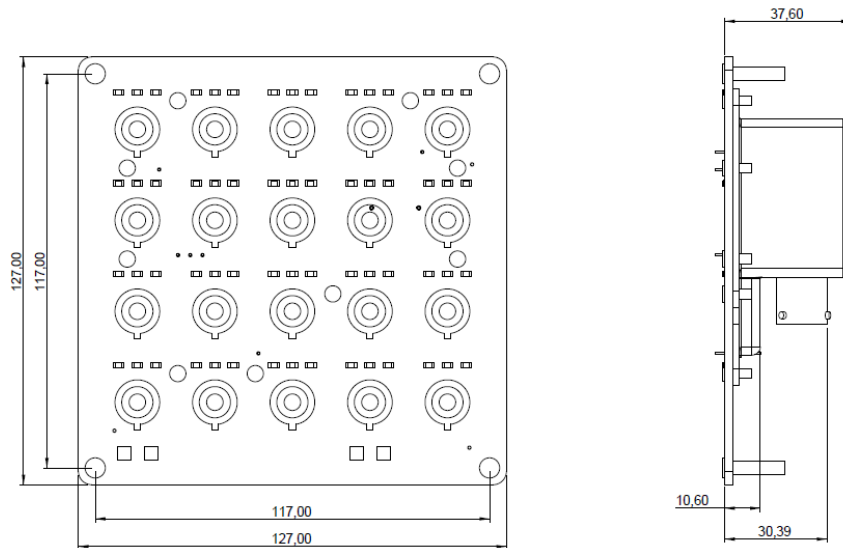
Installation

When installing the Membrane Switch Panel:

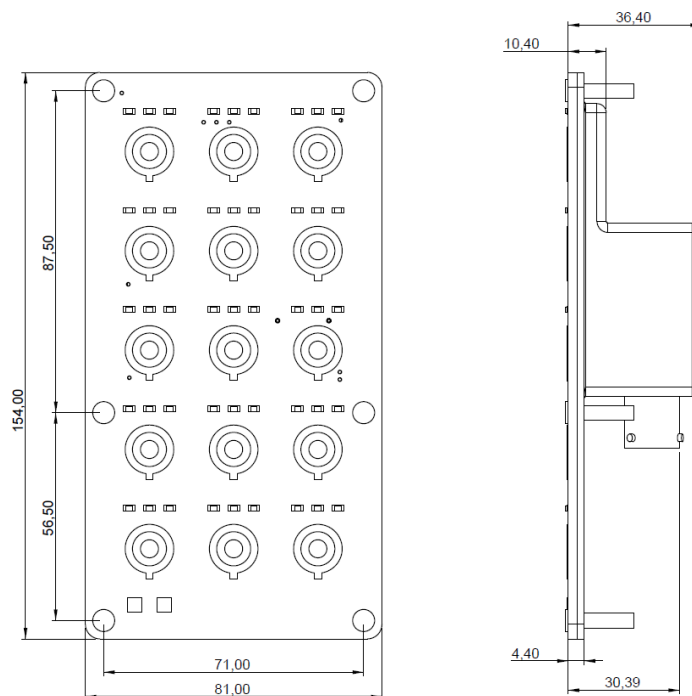
- select a position where the MSP will not be in constant contact with water, fuel or oil;
- protect the MSP from vibration.
- try not to place the MSP near sources of electrical interference i.e. ignition coils, plug leads, ECUs, alternators and telemetry antennas.

Dimensions

MSP20-5x4



MSP15-3x5



Note: The dimensions 37.60mm (MSP20-5x4) and 36.40mm (MSP15-3x5) are measured to the top of the PCB. The depth of membrane and backlight options is <1mm.

Recycling and Environmental Protection

Cosworth Electronics is committed to conducting its business in an environmentally responsible manner and to strive for high environmental standards.

Manufacture

Cosworth products comply with the appropriate requirements of the Restriction of Hazardous Substances (RoHS) directive (where applicable).

Disposal

Electronic equipment should be disposed of in accordance with regulations in force and in particular in accordance with the Waste in Electrical and Electronic Equipment directive. (WEEE).

Battery

This equipment does not contain a battery.

