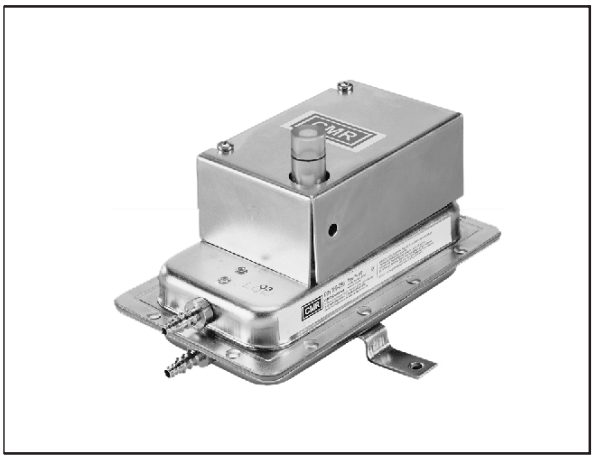
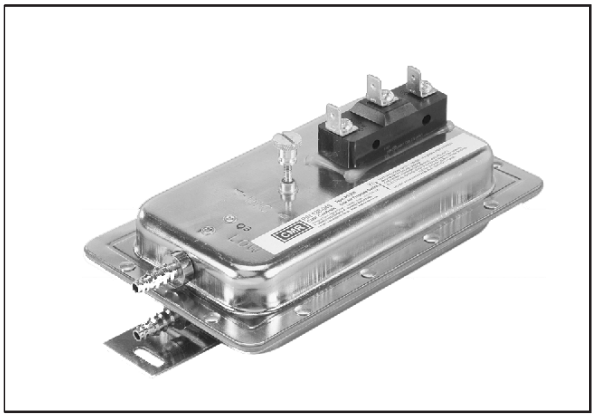
PS ULTRA LOW PRESSURE SWITCHES

- Extreme low pressure sensitivity
- Site Adjustable over a wide range
- Low pressure response at 13 Pa
- Low differential switching
- Fine set point adjustment screw
- 10 amp change over micro switch
- Can switch 10 amp non inductive loads
- Spade connection for easy OEM fitting
- Screw terminals for easy site wiring
- Zinc plated housing for rugged operation
- After Sales Service is provided by CMR
- 24 month warranty
- 20 Years field application experience



PS505 Pressure Switch withIndicator and Cover



PS250 Pressure Switch without Cover

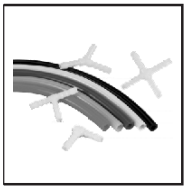
GENERAL
The PS pressure switch was designed for general purpose air flow proving for the HVAC industry and Industrial Process Control. The PS is mainly used in those applications where low switching differential and low response pressure is of utmost importance. The most common application is the sensing of low air flow when running variable volume fans. with Invertors. It is also used to signal dirty filter conditions or starts up electric heater batteries. The PS is a reliable safety switch to protect walls and windows in Room or Laboratory control systems to cut out the fan system in case of over pressure in the controlled area.
The switch is available as complete with a visual indicator to show the operator when the switch is made or simply as an OEM version which has no indicator or cover. An IP65 enclosure is available.

CONSTRUCTION
The PS is manufactured of sheet steel and then zinc plated to provide surface protection especially for heavy duty applications where plastic is not desired. A neoprene rubber diaphragm is sandwiched between two half cups and rivetted together.

A stainless steel calibrating spring is adjusted by the set point screw and presses onto the large area diaphragm and the lever of the micro switch. When pressure is applied to the diaphragm, the lever lifts up and switches the micro switch at a certain set point pressure. The micro switch has a very low differential switching between make and break and therefore, the switch is most suitable for low pressure switching and has an excellent repeatability.

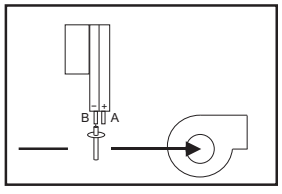
ACCESSORIES
Metal static or total pressure probes and coloured PVC Tubes with connectors can be supplied ex stock to make installation easier

Duct Probes

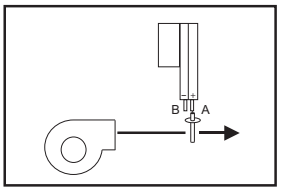


Tube and Fittings

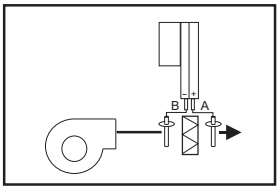
TYPICAL APPLICATIONS



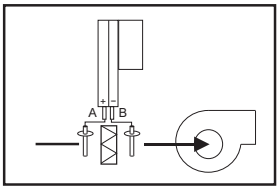
Suction Static Pressure



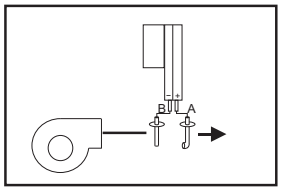
Supply Static Pressure



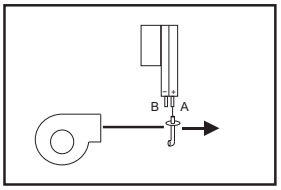
Filter Pressure on Supply



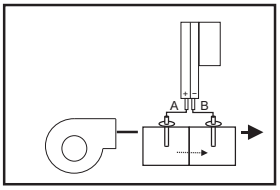
Filter Pressure on Extract



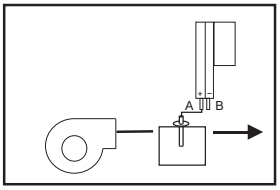
Velocity Pressure Supply



Total Pressure Supply



Chamber Differential Pressure



Chamber Static Pressure

CMR CONTROLS
Division of C.M.RICHTER EUROPE LTD

22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
Website : http://www.cmr.co.uk

Tel +44 (0) 1268 287222
Fax +44 (0) 1268 287099
e-mail: sales@cmr.co.uk

Copyright © 2000 CMR® C.M.RICHTER EUROPE LTD All rights reserved The information is subject to change without notice Issue GB 2 - 1 2001

PS LOW PRESSURE SWITCH DETAILS

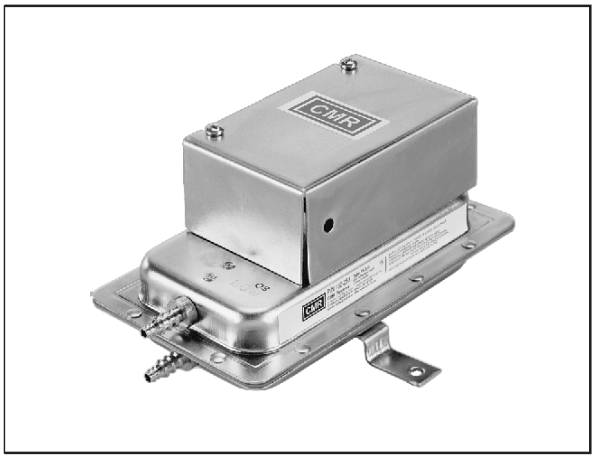
SWITCH DESCRIPTION

PS250
The PS250 Pressure Switch can be used up to 500Pa and has full adjustability. The difference between the PS505, PS510 and PS520 is simply the indicator, metal cover and compression fittings. The performance of the PS250 is slightly better as is manufactured to suit certain OEM equipment, such as fan coil units which have electric heater batteries to be switched on proving airflow.

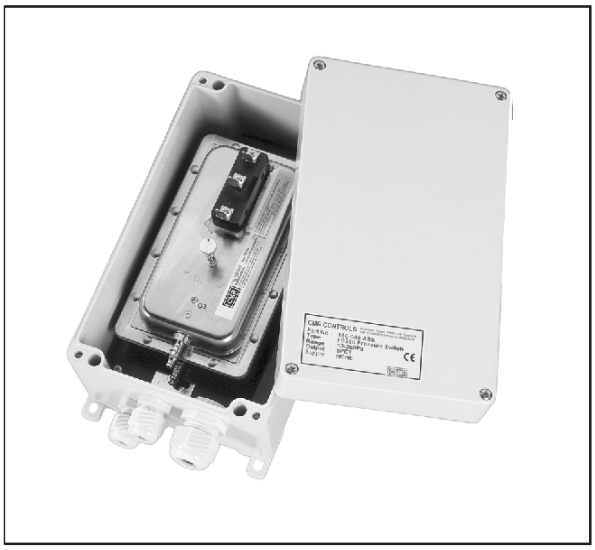
PS505
The PS505 has an indicator which consists of a piston that slides up and down a small plastic channel. The piston is connected directly to the diaphragm and has a red marking at the top. When the pressure switch is made, the red marker is in line with a black ring engraved into the plastic channel to indicate that the switch is made. This is useful when using this switch in filter monitoring application where a local visual indicator and a remote contact closure is required.

PS520/3200
The PS520/3200 have compression fittings for metal tube or nylon tube connections. This switch is not commonly used.

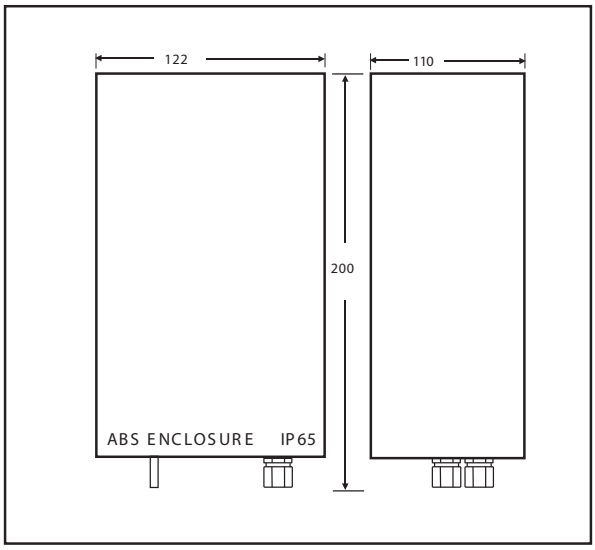
ENCLOSURE AND FITTINGS



PS510/3100 Pressure Switch without Indicator but with cover



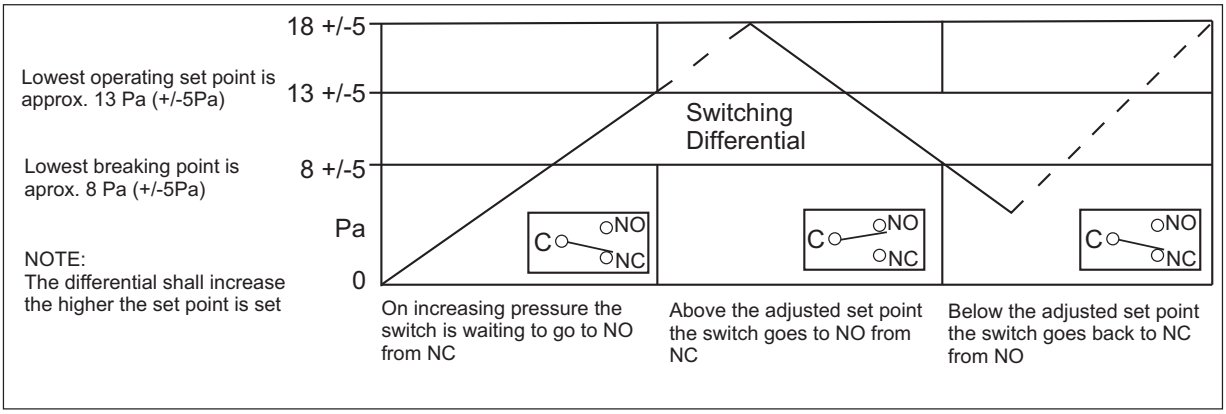
PS250 fitted into ABS IP65 enclosure with cable and tube glands



PS250 Pressure Switch with ABS enclosure IP65

PRESSURE SWITCH PERFORMANCE

PS250 Pressure Switch make and break on typical pressure cycle. The nipples must face downwards.



Lowest operating set point is approx. 13 Pa (+/-5Pa)

Lowest breaking point is aprox. 8 Pa (+/-5Pa)

NOTE:
The differential shall increase the higher the set point is set

On increasing pressure the switch is waiting to go to NO from NC

Above the adjusted set point the switch goes to NO from NC

Below the adjusted set point the switch goes back to NC from NO

CMR CONTROLS
Division of C.M.RICHTER EUROPE LTD

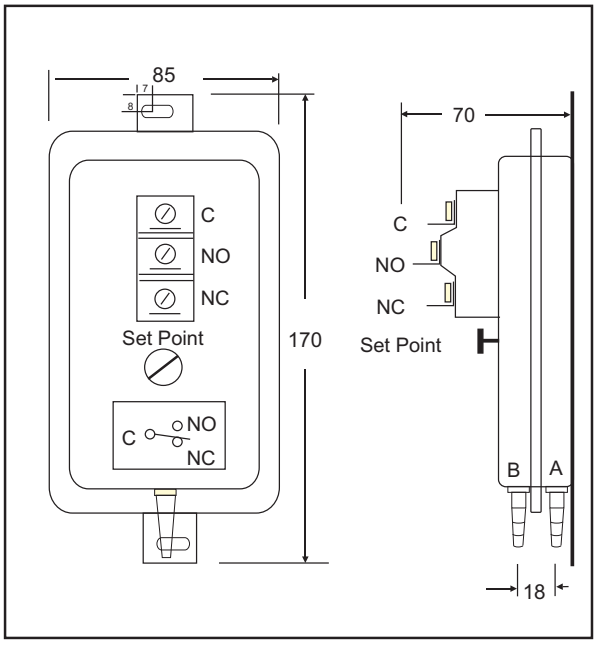
22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
Website : http://www.cmr.co.uk

Tel +44 (0) 1268 287222
Fax +44 (0) 1268 287099
e-mail: sales@cmr.co.uk

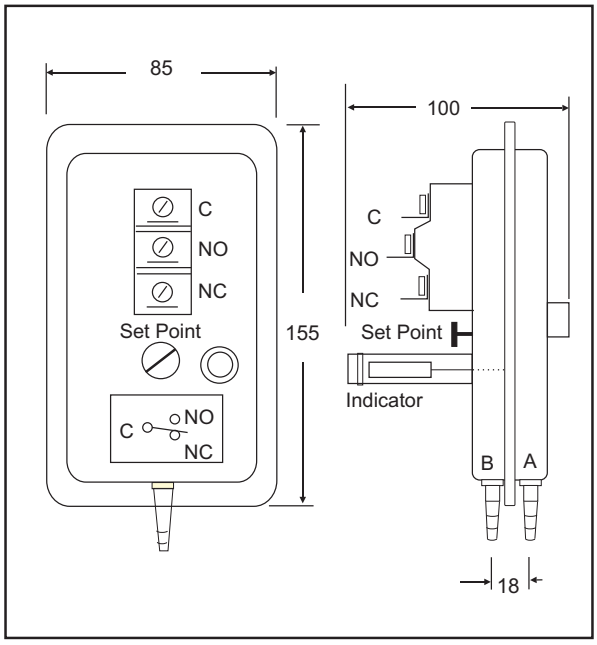
Copyright © 2000 CMR® C.M.RICHTER EUROPE LTD All rights reserved The information is subject to change without notice Issue GB 2 - 1 2001

PS DIMENSIONS AND CONNECTIONS

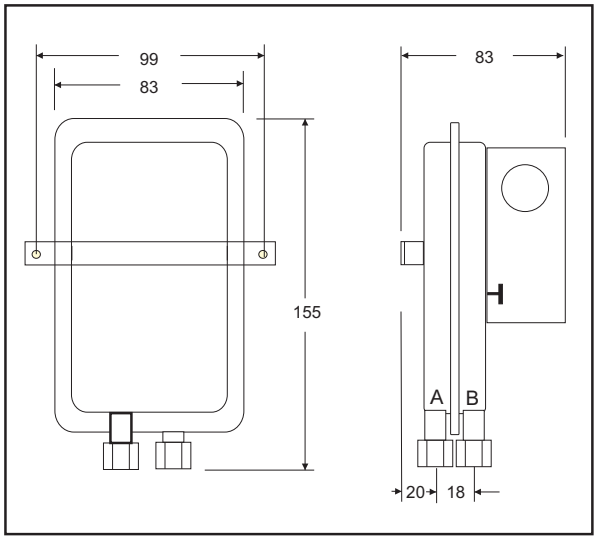
TUBE CONNECTIONS AND COMMISSIONING **DIMENSIONS**



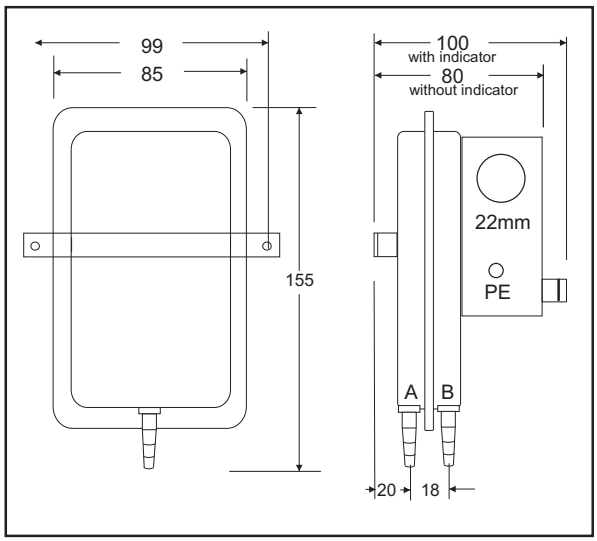
PS250 Pressure Switch for OEM applications



PS505 Pressure Switch with and PS510/3100 without indicator



PS520/3200 Pressure Switch with compression fittings



PS505 Pressure Switch and PS510/3100 with metal cover

Positive Pressure only:
Connect pressure tube to A and leave B open to atmosphere.

Negative Pressure only:
Connect pressure tube to B and leave A open to atmosphere.

Two negative pressures:
Connect the more negative pressure to B and the less negative pressure to A. i.e. -250Pa to B and -145Pa to A.

Two positive pressures:
Connect the higher pressure to A and the lower pressure to B. i.e. +250Pa to A and + 195Pa to B.

One positive and one negative pressure:
Connect the positive pressure to A and the negative pressure to B. i.e. +500Pa to A and -400Pa to B. The differential is 100Pa,

SET POINT ADJUSTMENT
Always install the switch vertically with the nipples in down position. The set point screw should be turned all the way anti clockwise. Do not use force when the screw comes to the end. Turn the set point a few turns clockwise which will engage the spring. No change in set point shall take place if the spring is not engaged. Apply a pressure to the switch or use the CMR CAL95 and pump up to required pressure. Turn the set point screw more clockwise to determine the correct set point.

CMR CONTROLS
Division of C.M.RICHTER EUROPE LTD

22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
Website : http://www.cmr.co.uk

Tel +44 (0) 1268 287222
Fax +44 (0) 1268 287099
e-mail: sales@cmr.co.uk

Copyright © 2000 CMR® C.M.RICHTER EUROPE LTD All rights reserved The information is subject to change without notice

Issue GB 2 - 1 2001

PS TECHNICAL AND ORDER DETAILS

Measurement Range	13...250Pa - 13...500Pa - 13...3000Pa
Set Point Range	Adjustable from 13 to 500Pa for Model PS250 and PS505/510/520 and 13...3000Pa Model PS3100/3200
Overload Capacity	3000Pa
Media	Non Corrosive Gases such as Air,N2,O2,CO2,N2 O, inert Gases
Diaphragm Unit	Neoprene moulded rubber
AC Power Applications	The micro switch can be used for low or high voltage from 5VAC to 277VAC.
	The switch is designed to switch up to 277VAC 300VA pilot duty .
	The switch can be used up to 10A for non inductive applications such as heating elements etc.
DC Power Applications	The switch can be used for low voltage applications to switch light duty lamps and led's
	It is normally used for digital inputs into building management systems
Switch Function	The micro switch is a single pole with double throw action SPDT
	When there is no pressure applied to the diaphragm the switch is in normally closed position NC
	When the pressure is higher than the set point than the switch changes over to normally open NO
Micro Switch	SPDT Single pole double throw
Operating Temperature	-40°C to +80°C The switch can be used for high temperature applications provided the sample line
	is separated with a ridged and flexible tube loop to cool the air down before it reaches the switch.
Mounting Position	Vertical - Nipples facing downwards
Weight	1 kg
Tolerance	+/- 8 Pa in the lower range approximately
Electrical Connections	Screw and spade terminals for electrics - plastic protection cover is available on request.
Conduit Hole	For PS5../PS3.. Series Switch. The hole is in the metal cover to suit 22mm or 1 x PG13 Gland
Tube Connections for	Positive and Negative Pressure Barbed Nipple for 4 up to 6.0mm I/D PVC tube x 15mm long
PS250/505/510/3100	
Pipe Connections for	Male externally threaded 7/15" 24uns 2A thread complete with nuts and self aligning ferrules
PS520/3200	1/4" O/D rigid tubing. 6mm ferrules and tube adaptors for 1/4" ferrules are available on request.
Enclosure	ABS Grey Protection IP65. Only supplied with PS250
Conformity	EN61010-1 SAFETY
Calibration	The set point can be factory adjusted on request as an option.

HOW TO ORDER

PART NUMBER	DESCRIPTION
180-049	PS250 Pressure Switch 13...250Pa up to 500Pa (Nipples) no metal lid for OEM applications.
180-049-ABS	PS250 Pressure Switch 13...250Pa up to 500Pa (Nipples) built into ABS IP65 enclosure with glands
180-050	PS505 Pressure Switch 13...500Pa (Nipples) complete with indicator and metal cover
180-053	PS510 Pressure Switch 13...500Pa (Nipples) complete with metal cover but no indicator
180-054	PS520 Pressure Switch 13...500Pa (Compression) complete with metal cover but no indicator
180-059	PS3100 Pressure Switch 13.3000Pa (Nipples) complete with metal cover but no indicator
180-060	PS3200 Pressure Switch 13.3000Pa (Compression) complete with metal cover but no indicator
180-085	Static Duct Probe 100mm long with straight sensing end.
180-090	Total Duct Probe 100mm long with 90° bend sensing end
180-088	Static Duct Probe 200mm long with straight sensing end.
180-092	Total Duct Probe 200mm long with 90° bend sensing end
250-780	2m long PVC Tube in Red
250-784	2m long PVC Tube in Blue
250-786	2m long PVC Tube in White
250-787	2m long PVC Tube in Yellow
250-788	2m long PVC Tube in Black

CMR CONTROLS
Division of C.M.RICHTER EUROPE LTD

22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
Website : http://www.cmr.co.uk

Tel +44 (0) 1268 287222
Fax +44 (0) 1268 287099
e-mail: sales@cmr.co.uk

Copyright © 2000 CMR® C.M.RICHTER EUROPE LTD All rights reserved The information is subject to change without notice Issue GB 2 - 1 2001