



Technical Overview

The PM-CS range of current switches can be used to monitor motors, pumps or other electrical loads where a switched output is required. There low minimum set point and small size make it ideal for monitoring small to medium motor loads. The output can be used for simple run/fail detection, a normally open solid state switch operates when the current level sensed by the internal transformer exceeds the threshold value.

Adjustable set point types, allow for easy detection of broken belts, drive belt slip or pump coupling shear. A typical HVAC motor that loses its load has a reduction of current draw of up to 50%.

Fixed set point types, provide a cost-effect solution for monitoring the status of unit vents, exhaust fans, re-circulation pumps and other fixed loads where belt loss is not a concern.

Features and Benefits

- Miniature size
- Self-powered, no supply required
- 100% Solid state, no moving parts to fail
- Status LED's for fast set-up
- Unique wire clamp, for easy installation
- More reliable than differential pressure switches

Product Codes

PM-CS-A-01	Adjustable set point, split core 0.75 to 150A (switched output 30Vac/dc)
PM-CS-A-02	Adjustable set point, solid core 0.5 to 150A (switched output 30Vac/dc)
PM-CS-A-03	Adjustable set point, split core 0.75 to 150A (switched output 240Vac)
PM-CS-F-01	Fixed set point, split core 0.35 to 150A (switched output 30Vac/dc)
PM-CS-F-02	Fixed set point, solid core 0.25 to 150A (switched output 30Vac/dc)
PM-CS-F-03	Fixed set point, split core 0.5 to 150A (switched output 240Vac)

Specification

Supply	Self-powered
Maximum sensed voltage	600Vac
Trip set point:	
PM-CS-A-01	0.75 to 150A
PM-CS-A-02	0.5 to 150A
PM-CS-A-03	0.75 to 150A
PM-CS-F-01	0.35 or less
PM-CS-F-02	0.25 or less
PM-CS-F-03	0.5 or less
Switched output: (low voltage versions)	
Max. current	0.8A (PM-CS-A-01 & 02) 0.4A (PM-CS-F-01 & 02)
Max. voltage	30Vac/dc
(high voltage output versions)	1A @ 240Vac (PM-CS-F-03)
Dimensions:	
Split core	65 x 50 x 30mm
Solid core	53 x 37 x 24mm
Aperture:	
Split core	13 x 13mm
Solid core	13mm dia.
Ambient:	
Temperature	-35 to +60°C
Humidity	5 to 95% non-condensing
Protection	IP10
Country of origin	U.S.A
Conformity	EMC, LVD, CE & UKCA Marked

WEEE Directive:



At the end of the products useful life please dispose as per the local regulations. Do not dispose of with normal household waste. Do not burn.



Installation

1. Current switches should only be installed by a competent, suitably trained technician, experienced in installation with hazardous voltages. (>50Vac & <1000Vac or >75Vdc & 1500Vdc).
2. Ensure that all power is disconnected before carrying out any work. Never rely on status indicating devices only to determine if power is present in a conductor.
3. When installing the split-core current switch, you must ensure that there are no dirt particles that will prevent good contact between the core pieces when the device is closed.
4. Mount the sensor in a suitable location using the removable mounting tab provided with a suitable screw or use the unique wire clamp which eliminates the need for drill mounting.
5. Care must be taken not to over tighten the screw terminals. The connections are polarity independent.

Notes;

1/ Low conductor current:

If the load is less than the required switching point you can loop the conductor through the sensor to multiply the load. Example, load is 0.20A, pass the cable through the aperture 5 times and you will have a total load of 1A. This is now a sufficient load to operate the switch.

2/ High conductor current and large diameter cables:

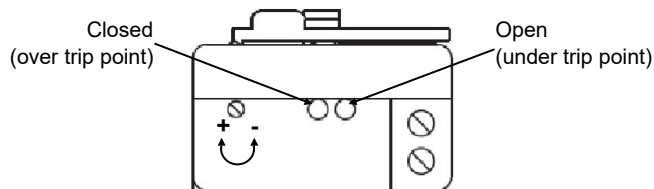
If the load is greater than 150A or the cable diameter is greater than the aperture of the current switch, you must use a suitable current transformer. Pass a cable connected to the secondary winding of the current transformer through the aperture.

Set point Adjustment (adjustable types only)

- A) Monitoring under-current (status, belt loss, coupling shear etc)
- B) Establish normal load conditions
- C) Turn the set point screw clockwise until status OPEN LED turns on.
- D) Slowly turn screw counter-clockwise until the status CLOSED LED just turns ON.
- E) Turn the screw an additional ¼ turn counter-clockwise for operational margin.

Monitoring over-current (mechanical problems, seized impeller etc)

- A) Establish normal load conditions
- B) Turn the set point screw counter-clockwise until status CLOSED LED turns on.
- C) Slowly turn screw clockwise until the status OPEN LED just turns ON.
- D) Turn the screw an additional ¼ turn clockwise for operational margin.



Trouble Shooting

The unit will not come on at all, no reading at the controller.

- A) Check to be sure that no more than 30Vac/dc (low voltage versions) or 240Vac (high voltage versions) has passed through the switch output contact. Voltages or currents above these levels will damage the unit
- B) Verify that the conductor you are monitoring is carrying more than the minimum set point (see page 2 of levels). If the sensor is monitoring less, employ installation note 1.
- C) Verify that the conductor you are monitoring is carrying no more than 150 Amps. If the sensor is monitoring more than 150 Amps, employ installation note 2.
- D) If using a split core version, assure that the sensor core mating surfaces are clean and that the core is completely closed.

Trouble Shooting (continued)

Set point screw has no stops.

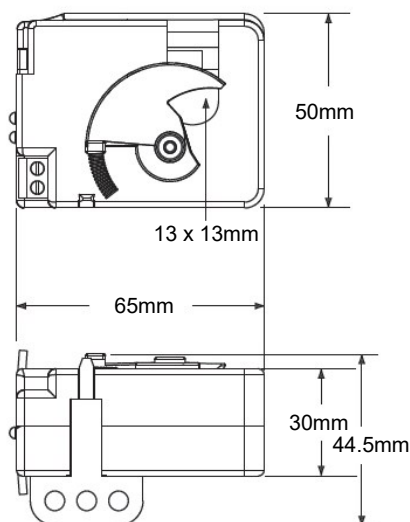
- A) The 20 turn set point screw has a slip clutch to prevent damage at either end. To re-start the calibration process, turn the screw 20 full turns counter clockwise. This sets the device in its original and most sensitive position. Resume calibration from the beginning.

Both LED's are lit.

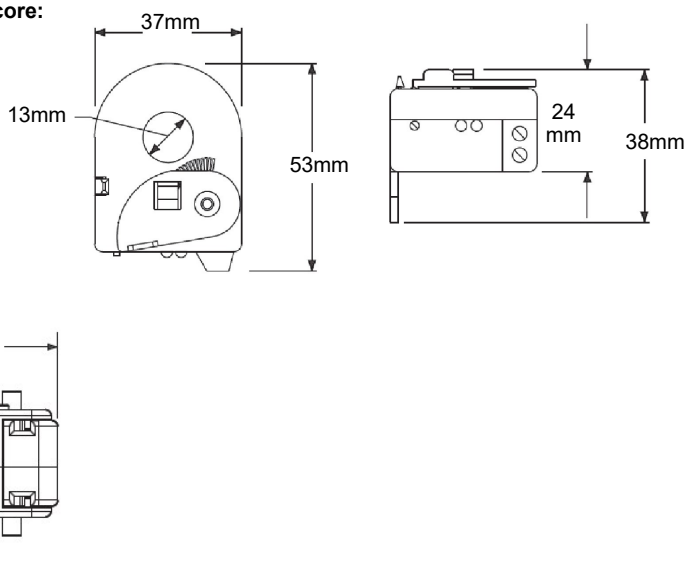
- B) The screw has been turned too far to the right (out of calibration). Turn the screw 20 full turns counter-clockwise and resume calibration from the beginning.

Dimensions

Split core:



Solid core:



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