PRESSURE

PRESSURE CONTROLLER
PCM SERIES

DESCRIPTION

The **Kele PCM Series Pressure Controller** is a low air pressure transducer combined with a microprocessor-based proportional or Proportional plus Integral (PI) controller. The compact size and ease of installation and setup makes this unit ideal for standard HVAC applications. Ranges are available from 0-2, 3, or 5 "W.C. The setpoint adjustment knob is clearly marked with the appropriate scale for ease of use. All setup and tuning is easily accomplished by DIP switches and bottle plug jumpers. Mounting is a snap with the convenient mounting tabs or with the DIN rail mounting option. Remote setpoint is also possible with voltage or milliamp signals. The **PCM Series** can be configured for direct or reverse acting control.
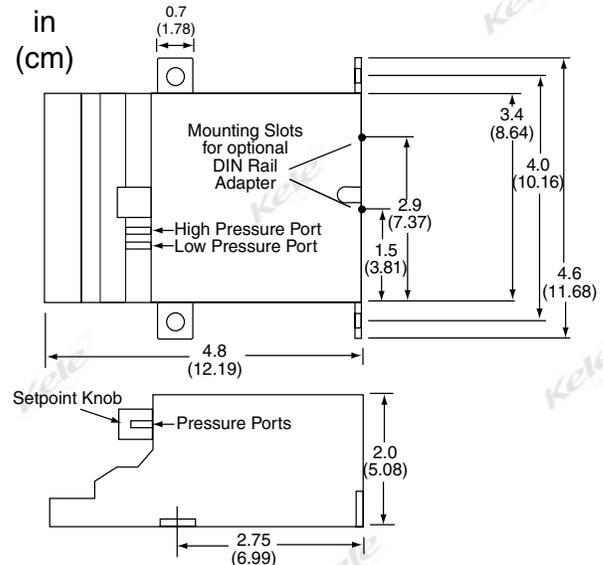
FEATURES

- *Proportional or PI control*
- *Easy setup*
- *DIP switch/jumper setup and tuning*
- *Selectable proportional band*
- *Selectable integral reset rate*
- *Direct or reverse acting*
- *Optional DIN rail mounting*
- *Compact size*
- *Position insensitive*

APPLICATION

- *Controlling duct pressures*
- *Isolation rooms*
- *VAV systems*
- *Inlet guide vanes and VFDs*
- *Paint booths*
- *Relief damper control*
- *Pressure bypass damper control*

PRESSURE

DIMENSIONS

in (cm)

Mounting Slots for optional DIN Rail Adapter
High Pressure Port
Low Pressure Port
0.7 (1.78)
3.4 (8.64)
4.0 (10.16)
2.9 (7.37)
1.5 (3.81)
4.6 (11.68)
4.8 (12.19)
Setpoint Knob
Pressure Ports
2.0 (5.08)
2.75 (6.99)

SPECIFICATIONS

Supply Voltage	24 VDC +15%, -10%, <75mA
Signal Output (Volts,Current, Switch)	4-20 mA sourcing
Min Current Output Impedance	650Ω max
Setpoint (SP) Adjust Local	POT with range legend
Setpoint (SP) Remote Adjust	10KΩ POT, (up to 24" away) (UCM-SPA)
	1-5VDC @10KΩ
	4-20 mA @250Ω
Control Type	Single loop Proportional or "PI"
Display/Audible (If Any)	Green Power LED
Accuracy	±2% of range (including linierity & hysteresis)
Resolution	255 steps
Sensor Type	Piezoresistive
Adjustments (Loop Tuning)	Adj. DA/RA, Proportional range and Integral time

Normal Measurement Range	0 to (2", 3" or 5") WC
Overpressure (Burst)	300" WC (74.7 kPa)
Max Operating Pressure (Proof)	200" WC (49.8 kPa)
Operating Temperature	32° to 125°F (0° to 52°C)
Operating Humidity	0 to 90% Non-condensing
Wetted Parts	Silicon
Media Compatibility	Inert dry air
Process Connection	Two 3/16" dia HI/LO Brass nipples for 1/4" Poly tubing
Wiring Terminations	3-4 depending on configuration, <18 AWG
Mounting	2 tabs, 0.19" holes or DIN rail option (47)
Enclosure Rating	NORYL SEIGFN2 plastic, NEMA 1, UL94V-0
Dimensions	2.0"W x 4.6"H x 4.8"D, (5.1 x 11.7 x 12.2 cm)
Weight	1.3 lb (0.61 kg)
Approvals	RoHS
Warranty	18 Months

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WIRING

PCM DIP SWITCH SETTINGS
1=ON   0=OFF

	Local Setpoint	Remote Setpoint
A1	0	1
A2	1	0

	Reverse Acting	Direct Acting
A3	0	1

This Unit's Range Is:
- 0-2" W.C.
- 0-3" W.C.
- 0-5" W.C.

Reset Per Minute Rate

	Off	0.5	1.0	2.0
A4	0	0	1	1
A5	0	1	0	1

Proportional Throttling Range Settings

	10%	20%	35%	50%	65%	80%	90%	100%
A6	0	0	0	0	1	1	1	1
A7	0	0	1	1	0	0	1	1
A8	0	1	0	1	0	1	0	1

PCM JUMPER POSITIONS
All B switches should be in the off position
Local Setpoint Jumper Positions 1, 8, 11
For Remote Setpoint:
    Voltage Input Jumper Positions 2, 8, 11
    Current Input Jumper Positions 1, 8, 11

ON ↑ A   1 2 3 4 5 6 7 8

ON ↑ B   1 2 3 4 5 6 7 8

FEEDBACK   LOCAL SETPOINT   REMOTE SETPOINT

1
2
3
4
5
6
7
8
9
10
11
12

- PWM INPUT
- PWM INPUT
- REM SPT INPUT
- LOC SPT POT +
- LOC SPT INPUT
- LOC SPT POT −
- FEEDBK INPUT
- 24 PWR
- COMMON
- MA SIG OUTPUT

Remote Setpoint Input

Common

+ 4-20 mA or 1-5V Remote Setpoint
−

Optional Remote Setpoint Wiring 4-20 mA or 1-5 VDC

+ 24 VDC Power
− 4-20 mA Sourcing Output Signal to
+ Controlled Device
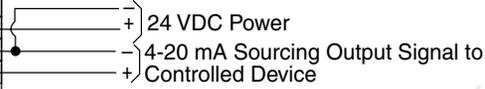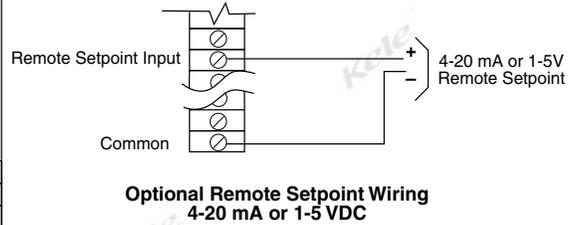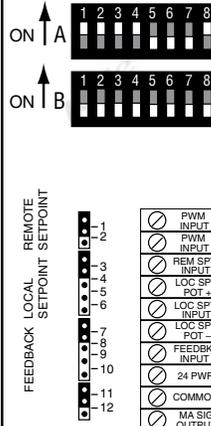
SETUP FOR LOCAL SETPOINT OPERATION (FACTORY SETTINGS)

1. Switch A1 off and switch A2 on.

2. Set jumper positions to 1, 8, and 11.

3. Set switch A3 in the on position for direct acting control and in the off position for reverse acting control.

4. Set switches A4 and A5 in the off position.

5. Set switches A6, A7, and A8 in the on position. This will set the proportional band at 100%.

6. Set all B switches to the off position.

7. All systems will require a fine-tuning process. Start the tuning process by decreasing the proportional band in increments through switches A6 through A8 until the system becomes unstable. Then, return to the DIP switch settings before the system started to hunt.

8. Switches A4 and A5 are used to select the integral reset rate. This feature corrects the offset that is inherent with proportional-only controllers. If it is determined that the integral reset is needed, increase the rate until this offset is corrected and still maintains stability.

ORDERING INFORMATION

MODEL	DESCRIPTION		
PCM	Pressure setpoint controller		
	PRESSURE RANGE		
	020	0-2" W.C.	
	030	0-3" W.C.	
	050	0-5" W.C.	
		OPTIONS	
		47	DIN rail mounting (must be factory installed)

PCM	—	020	—	47

Example: **PCM-020-47** Pressure controller for a 0-2" W.C. range with DIN rail mounting

RELATED PRODUCTS

A-301-K	Duct static pressure tip, 1/4" compression
A-302-K	Duct static pressure tip, 1/4" barb
A-308-K	Duct static pressure fitting, 1/4" barb
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)
RPS	Stainless steel room pressure sensor, 1/4" barb
RPS-I	Ivory plastic room pressure sensor, 1/4" barb
RPS-W	White plastic room pressure sensor, 1/4" barb
SD-01	Surge dampener
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)