

Model 33D

Solid-State Pressure Switch

Pneumatic Ranges : Vac to 230 psi

All-Fluid Ranges : 0 to 9100 psi
(all stainless-steel wetted parts)

- Extremely Long Life - 100 million cycles
- Large 4-Digit LCD Display with Backlight
- Single or Dual Independent Switch Outputs
(optional 4-20 mA analog output)
- Programmable Pressure Display Units
- N/O, N/C or Window Mode Operation
- LED Switching Status Indication
- Very Fast Switching - less than 10 ms
- Compact Design (30 x 30 x 86 mm) -
allows flush panel mounting
- Standard M12 x 1 Electrical Connector -
mates with popular molded cordsets
- Advanced Functions:
 - programmable delays to 20 seconds
 - access code prevents tampering



Model 33D

Rugged, precise and *intelligent*

Herion USA Inc.
176 Thorn Hill Road
Warrendale, PA 15086
Phone: 724.776.5577 Fax: 724.776.0310
email: sales@herionusa.com www.herionusa.com



Incorporating **HERION**

Technical Data

Pressure Ranges

Pneumatic Versions
(for compressed air or neutral gas only)

- 1 to 1 bar (- 14 to 15 psi)
0 to 16 bar (0 to 230 psi)

Hydraulic / All-Fluid Versions
(for gas or liquids – including aggressive media)

0 to 10 bar (0 to 145 psi)
0 to 40 bar (0 to 580 psi)
0 to 100 bar (0 to 1450 psi)
0 to 160 bar (0 to 2300 psi)
0 to 250 bar (0 to 3600 psi)
0 to 400 bar (0 to 5800 psi)
0 to 630 bar (0 to 9100 psi)

Power Requirements

Operating Voltage: : 10 – 32 VDC
: 15 – 32 VDC (analog versions)
Allowable Ripple : Less than 10%
Current Consumption : 50 mA max (plus load current)

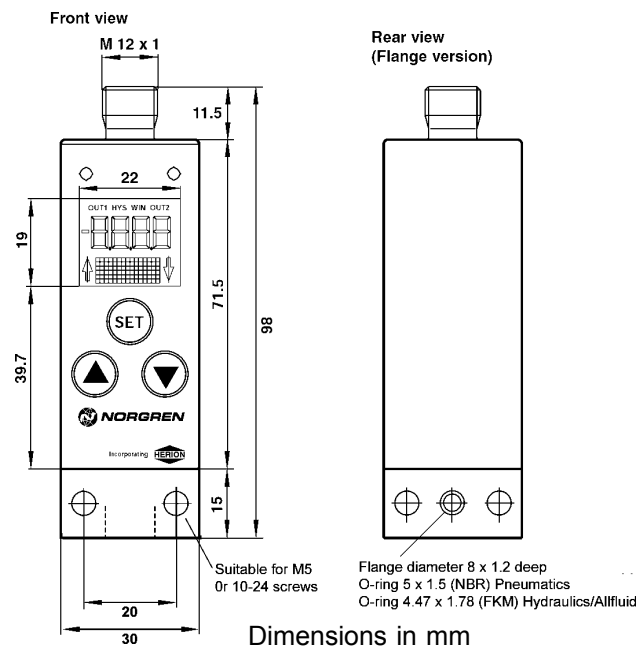
Power connection is reverse polarity protected

Display Panel / Keypad

- Large 4-digit LCD w/ alphanumeric matrix
- Programmable pressure units – PSI, BAR, or MPA
- Backlight for high visibility
- LED status indicator for each output
- Keypad access protection prevents tampering

Electromagnetic Compatibility

Interference emission per EN 50081 Part 1
Interference immunity per EN 50082 Part 2



Performance Characteristics

Digital Outputs : PNP sourcing type transistor
Switching Voltage : Supply minus 1.5 V
Max Load Current: : 500 mA per output

Short-circuit protected / suitable for inductive loads

Optional Analog Output: 4 – 20 mA

Set / Reset Points adjustable 0 – 100% of FS

Programmable Features (each output independently)

- Standard, Hysteresis or Window Mode
- Normally Open or Normally Closed
- On / Off Delays from 0 – 20 sec

Linearity : Less than .2% of FS

Temperature Sensitivity

Zero Point Effect : .4% of FS / 10K
Range Effect : .4% of FS / 10K

Materials

Aluminum Housing

Pneumatic : Silicon Sensor / Aluminum Port
Hydraulic / All-Fluid : 316 Stainless Sensor and Port

Physical / Environmental

Mounting : Arbitrary
Electrical Connection : M12 x 1 5-pin single key
Fluid Connections : 1/4 NPT, G1/4 (BSPP), flange
Ambient Temperature : -10 to 60 C (14 to 140 F)
Fluid Temperature : -10 to 80 C (14 to 175 F)
Protection Class : IP65

Electrical Connections for M12 x 1

Pin	Signal	Cable Color
1	+ 24 V Power Supply	brown
2	Out 2 (PNP or analog)	white
3	Common	blue
4	Out 1 (PNP)	black
5	Earth Ground	grey

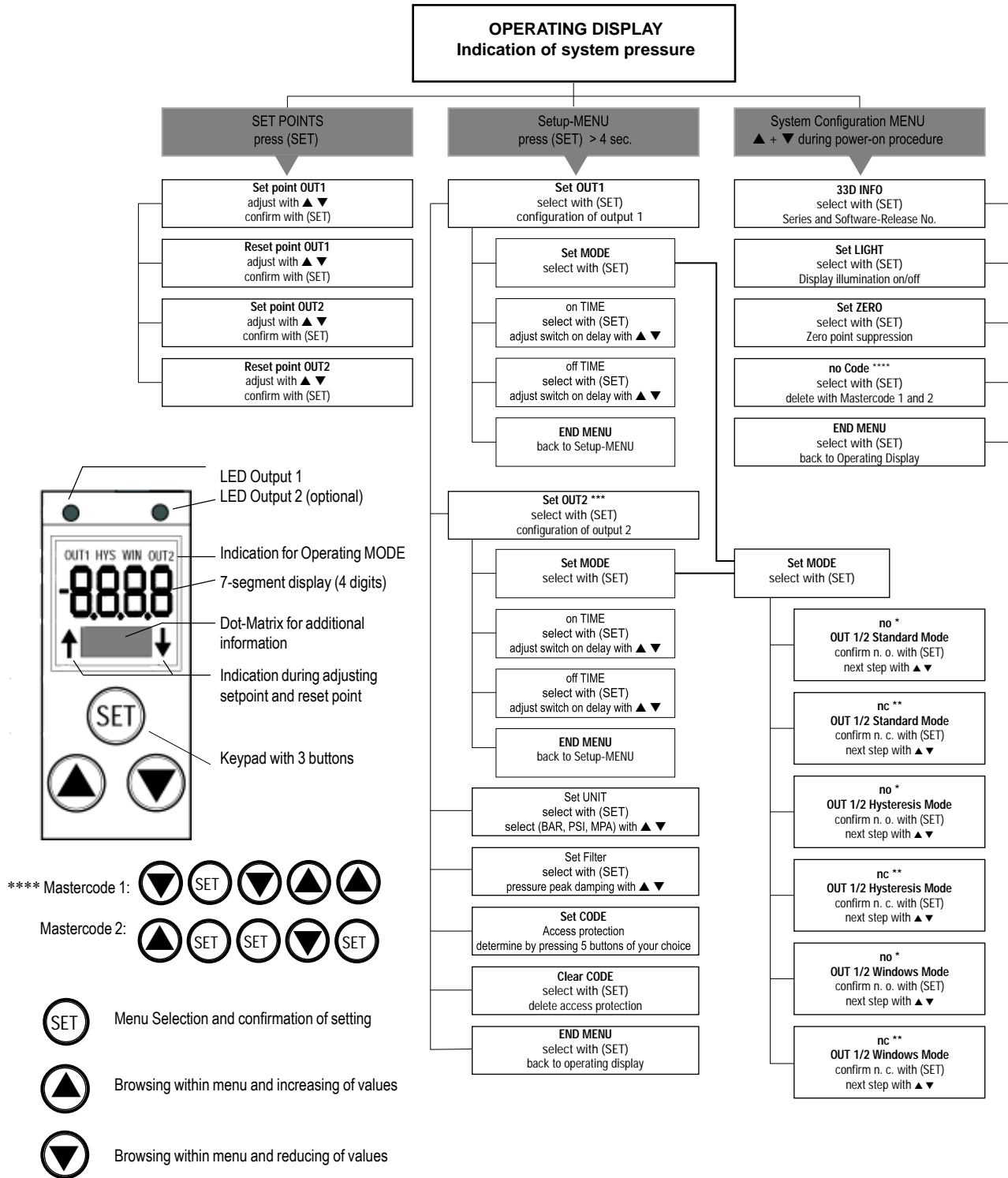
Accessories

Part Number	Connectors and Cordsets (M12 x 1) *
8112184	Mating Connector 5-pin straight w/ screw terminals, no cable (Hirschmann PN 933 171-100 or similar)
8112193	Molded Cordset 5-pin straight w/ 2m cable (Hirschmann PN 933 239-041 or similar)
8112194	Molded Cordset 5-pin 90° w/ 2m cable (Hirschmann PN 933 236-041 or similar)

* must be ordered separately

Note: Suitable cordsets are also available from other mfg's – i.e. Brad Harrison, Canfield, Remke.

Menu Programming Options



- * no = output signal changes from 0V to +V on rising pressure
- ** nc = output signal changes from 0V to +V on falling pressure
- *** 33D Vacuum version with analog output signal 4...20 mA (086304X) can be programmed as follows:
 - a) 4...20 mA can be adjusted to range 0...+1 (0 bar = 4 mA)
 - b) 4...20 mA can be adjusted to range -1...+1 bar (0 bar = 12 mA)

Model 33D – Master Part Number Selection

0 8 6 3	X	X	X
<p>X = Fluid connection</p> <ul style="list-style-type: none"> 2 = G 1/4 (BSPP) female 4 = 1/4 NPT female 6 = flange mount 			
<p>X = Output signal</p> <ul style="list-style-type: none"> 1 = 1 digital output PNP 2 = 2 digital outputs PNP 4 = 1 digital output PNP / 1 analog 4 to 20 mA 			
<p>X = Pressure range</p> <ul style="list-style-type: none"> 0 = Vac to 1 bar (Vac to 15 psi) Pneumatic 1 = 0 to 10 bar (0 to 145 psi) Hydraulic / Allfluid 2 = 0 to 16 bar (0 to 230 psi) Pneumatic 3 = 0 to 40 bar (0 to 580 psi) Hydraulic / Allfluid 4 = 0 to 100 bar (0 to 1450 psi) Hydraulic / Allfluid 5 = 0 to 160 bar (0 to 2300 psi) Hydraulic / Allfluid 6 = 0 to 250 bar (0 to 3600 psi) Hydraulic / Allfluid 7 = 0 to 400 bar (0 to 5800 psi) Hydraulic / Allfluid 8 = 0 to 630 bar (0 to 9100 psi) Hydraulic / Allfluid 			
<p>Display is programmable to read PSI, BAR or MPA</p>			

Standard North American Versions

Pneumatic

Single Switch Output

Switching Range bar (psi)	Proof Pressure bar (psi)	Fluid Connection	Output Signal	Resolution bar (psi)	Part Number
Vac - 1 (Vac - 15)	10 (145)	1/4 NPT	1 x PNP	.005 (0.1)	0863014
0 - 16 (0 - 230)	30 (435)	1/4 NPT	1 x PNP	.050 (0.5)	0863214

Dual Switch Outputs

Switching Range bar (psi)	Proof Pressure bar (psi)	Fluid Connection	Output Signal	Resolution bar (psi)	Part Number
Vac - 1 (Vac - 15)	10 (145)	1/4 NPT	2 x PNP	.005 (0.1)	0863024
0 - 16 (0 - 230)	30 (435)	1/4 NPT	2 x PNP	.050 (0.5)	0863224

Hydraulic / All-Fluid

Single Switch Output

Switching Range bar (psi)	Proof Pressure bar (psi)	Fluid Connection	Output Signal	Resolution bar (psi)	Part Number
0 - 10 (0 - 145)	20 (290)	1/4 NPT	1 x PNP	0.05 (0.5)	0863114
0 - 40 (0 - 580)	80 (1160)	1/4 NPT	1 x PNP	0.20 (2)	0863314
0 - 100 (0 - 1450)	200 (2900)	1/4 NPT	1 x PNP	0.50 (5)	0863414
0 - 160 (0 - 2300)	300 (4350)	1/4 NPT	1 x PNP	0.50 (5)	0863514
0 - 250 (0 - 3600)	500 (7250)	1/4 NPT	1 x PNP	1 (10)	0863614
0 - 400 (0 - 5800)	600 (8700)	1/4 NPT	1 x PNP	2 (20)	0863714
0 - 630 (0 - 9100)	1000 (14500)	1/4 NPT	1 x PNP	2 (20)	0863814

Dual Switch Outputs

Switching Range bar (psi)	Proof Pressure bar (psi)	Fluid Connection	Output Signal	Resolution bar (psi)	Part Number
0 - 10 (0 - 145)	20 (290)	1/4 NPT	2 x PNP	0.05 (0.5)	0863124
0 - 40 (0 - 580)	80 (1160)	1/4 NPT	2 x PNP	0.20 (2)	0863324
0 - 100 (0 - 1450)	200 (2900)	1/4 NPT	2 x PNP	0.50 (5)	0863424
0 - 160 (0 - 2300)	300 (4350)	1/4 NPT	2 x PNP	0.50 (5)	0863524
0 - 250 (0 - 3600)	500 (7250)	1/4 NPT	2 x PNP	1 (10)	0863624
0 - 400 (0 - 5800)	600 (8700)	1/4 NPT	2 x PNP	2 (20)	0863724

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