

Model PSD-30 Pressure Transmitter with Integral LED Display and Programmable Solid State Switches

WIKA Datasheet PSD-30

Applications

- Pumps and compressors
- Hydraulics and pneumatics
- Machine tools
- Machine building

Special Features

- Available with single or dual NPN or PNP solid state switches
- High visibility, rugged 14-segment red LED display electronically rotates 180° for top-down installation
- Independent rotation between the M12x1 electrical connection and the display
- User-friendly, intuitive 3-key operation
- Versions with 4-20 mA or 0-10V analog output available
- Programming menu meets VDMA Standards for user friendly navigation

Description

Award-winning functionality and design

The design and outstanding functionality of the PSD-30 received the **IF Product Design Award** in 2009. The display, with its .35" (9 mm) high digits, was designed to be as large as possible and positioned at an angle, so the pressure reading is visible from a distance of at least 10 feet (3 meters). Time-proven and rugged LED technology with 14-segment display is used so alphanumeric messages are much easier to understand compared to typical 7-segment displays.

The large, ergonomically designed programming push buttons provide the user with tactile feedback for immediate confirmation that the touch event was registered by the transmitter. The user-friendly menu navigation layout meets the new VDMA Standard form for fluid sensors (24574-1, Part 1, pressure switch). The goal of the VDMA is to simplify the use of pressure switches by standardizing menu navigation and display parameters.



Model PSD-30 Pressure Transmitter with Integral LED Display

Flexible and adaptable

The PSD-30 can be adjusted three different ways to fit specific installation requirements. The display and electrical connection can be rotated independently to maximize visibility while still orienting the electrical connection in the best position for the cable connector. If the transmitter is installed overhead or upside down the display can be electronically rotated 180°.

Quality and reliability

Time tested, proven WIKA thin film and piezoresistive pressure sensor technology is an integral part of the PSD-30 providing the high quality and long term reliability users demand.

Specifications

Model PSD-30

Pressure ranges	psi	15	25	30	50	100	160	200	300
Over pressure safety	psi	30	60	60	100	200	290	400	600
Burst pressure	psi	75	150	150	250	500	500	1500	1500
Pressure ranges	psi	500	1000	1500	2000	3000	5000	8000	
Over pressure safety	psi	1000	1740	2900	4000	6000	10000	17400	
Burst pressure	psi	2500	7975	11600	14500	17400	24650	34800	
		{Absolute pressure: 0 ... 15 psi up to 0 ... 300 psi}							
		{Vacuum and compound: -14.5 ... 0 psi up to -14.5 ... 300 psi}							
Pressure ranges	bar	1	1.6	2.5	4	6	10	16	25
Over pressure safety	bar	2	3.2	5	8	12	20	32	50
Burst pressure	bar	5	10	10	17	34	34	100	100
Pressure ranges	bar	40	60	100	160	250	400	600	
Over pressure safety	bar	80	120	200	320	500	800	1200	
Burst pressure	bar	400	550	800	1000	1200	1700	2400	
		MPa and kg/cm2 are available							
		{Absolute pressure: 0 ... 1 bar up to 0 ... 25 bar}							
		{Vacuum pressure: -1 ... 0 bar up to -1 ... 24 bar}							
Fatigue life		Rated to 10 million cycles							
Materials									
■ Wetted parts									
Pressure connection		316 L							
Pressure sensor		316 L (13-8 PH for ranges above 150 psi)							
■ Case									
Lower body		316 L							
Plastic head		Heat and chemical resistant fiberglass reinforced plastic (PBT)							
Keyboard		TPE-E							
Display window		PC							
■ Internal transmission fluid		Synthetic Oil (only with pressure ranges < 0 ... 160 psi and ≤ 0 ... 300 psia)							
Power supply U+	U+ in VDC	15 ... 36							
Signal output and maximum ohmic load RA	RA in Ohm	4 ... 20 mA, 3-wire				RA ≤ 0,5 k			
		0 ... 10 V, 3-wire				RA > 10 k			
		Adjustment zero point offset, max. 3 % of span							
Setting time (Analog signal)	ms	3							
Current consumption	mA	≤ 100							
Switch points		Individually adjustable using external control keys							
■ Type		PNP or NPN transistor switching output							
■ Number		1 or 2							
■ Function		user-adjustable, normally open / normally closed; windows- and hysteresis functions							
■ Contact rating	VDC	Supply voltage (U+) - 1 V							
■ Switching current	mA	250							
■ Response time	ms	≤ 10							
■ Accuracy	% of span	≤ 0.5 (switch setting)							
Isolation voltage	VDC	500							
Display									
■ Design		Red 4-digit, 14 segment LED .35" (9 mm) high							
■ Range		-1999 to 9999							
■ Accuracy		≤ 1.0 ± 1 Digit							
■ Update	ms	1000, 500, 200, 100 (adjustable)							
Accuracy	% of span	≤ 1.0 *)							
		*) Including non-linearity, hysteresis, zero point and full scale error (corresponds to error measurement per IEC 61298-2)							
Non-linearity	% of span	≤ ± 0.5				(BFSL) according to IEC 61298-2			
Long-term drift	% of span	≤ 0.2				according to IEC 61298-2			
Permissible temperature of									
Medium **)		-4 ... +185 °F				-20 ... +85 °C			
Ambient **)		-4 ... +176 °F				-20 ... +80 °C			
Storage **)		-4 ... +176 °F				-20 ... +80 °C			
		**) Also complies with EN 50178, Tab. 7, Operation (C) 4K4H, Storage (D) 1K4, Transport (E) 2K3							

Specifications

Model PSD-30

Rated temperature range		+32 ... +176 °F	0 ... +80 °C
Temperature error within rated temperature range		≤ 1.0 typ., ≤ 2.5 max.	
Temperature coefficients within rated temperature range			
■ Mean TC of zero	% of span	≤ 0.2 / 10 K	
■ Mean TC of span	% of span	≤ 0.2 / 10 K	
Relative humidity	%	< 90	
Approval		cULus (pending)	
RoHS-conformity		Yes	
CE-conformity			
■ Pressure equipment directive		This instrument is a pressure accessory as defined by the directive 97/23/EC 2004/108/EEC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations)	
■ EMC directive			
Shock resistance	g	50 according to IEC 60068-2-27 (mechanical shock)	
Vibration resistance	g	10 according to IEC 60068-2-6 (vibration under resonance)	
Wiring protection			
■ Overvoltage protection	VDC	40	
■ Short-circuit protection		S+/SP1/SP2 to U-	
■ Reverse polarity protection		U+ to U-	
Weight	oz	Approx. 7	

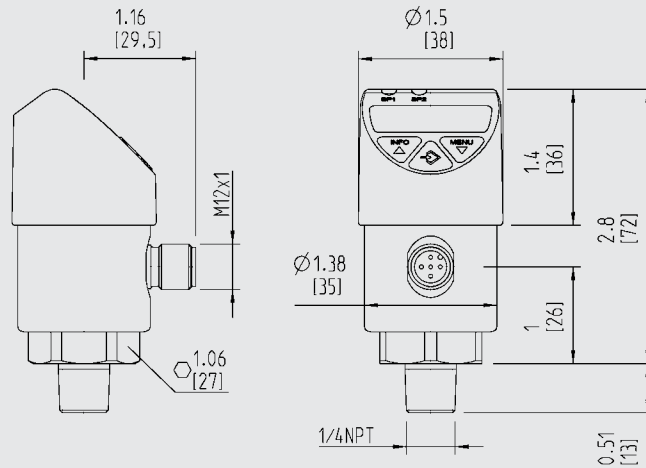
Dimensions in inches (mm)

Electrical connection

Circular connector *
M 12x1 5-pin

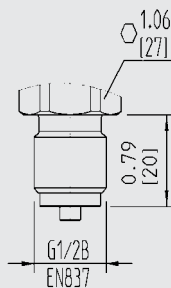
Pressure connections

1/4" NPT Male

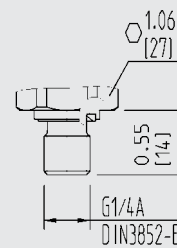


Optional pressure connections (others available)

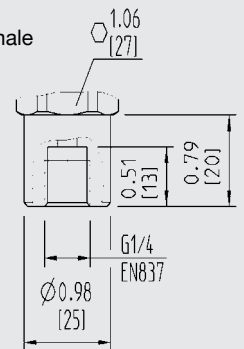
G 1/2 B



G 1/4 A to DIN 3852-E





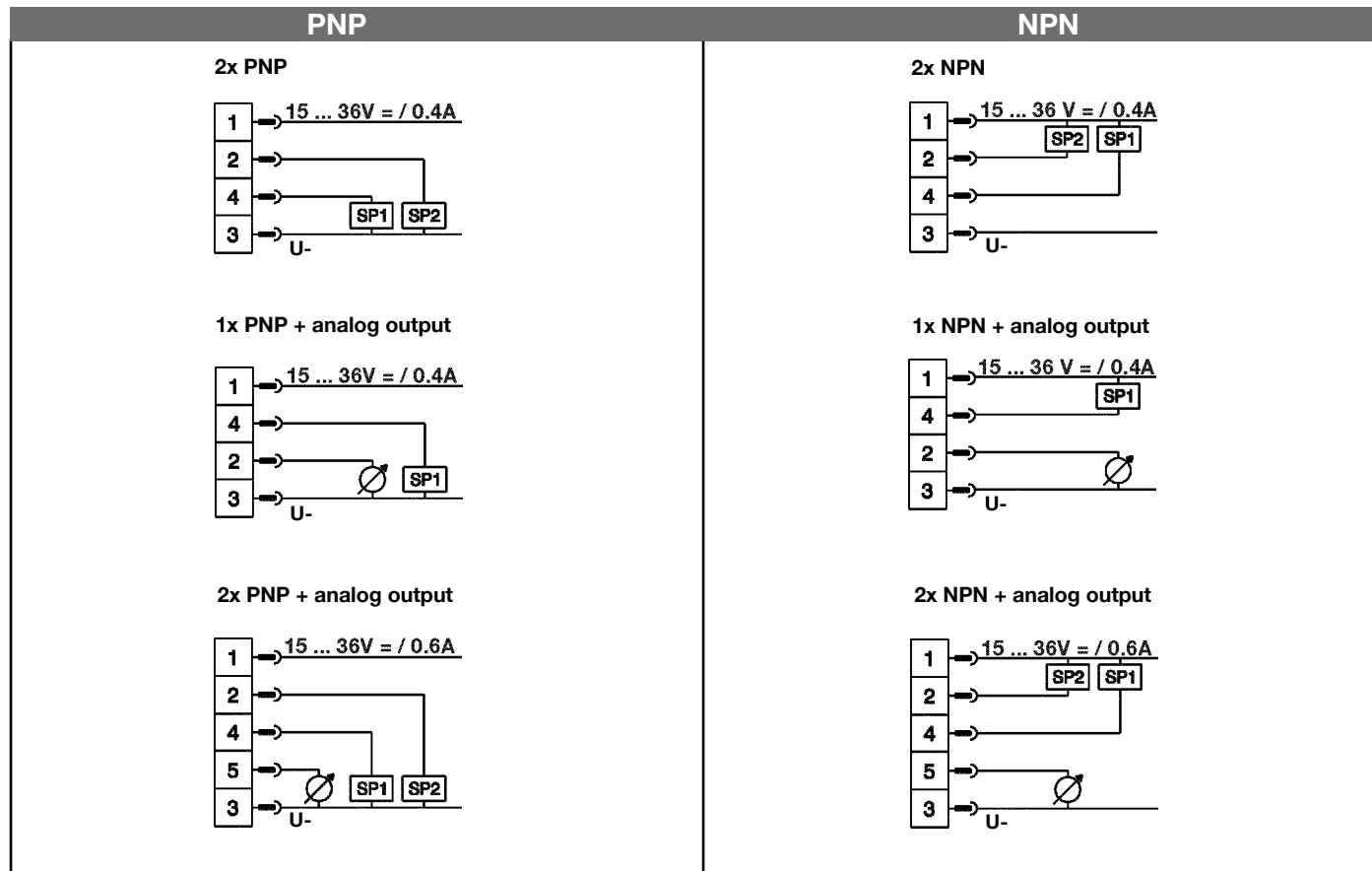
G 1/4 Female



* Mating connectors are not included

Wiring Details

	Circular connector M12x1, 4-pin	Circular connector M12x1, 5-pin
		
	2 switching outputs or 1 switching output + 1 analog output	2 switching outputs + 1 analog output
	U+ = 1 U- = 3 SP1 = 4 SP2 = 2 / S+ = 2	U+ = 1 U- = 3 SP1 = 4 SP2 = 2 S+ = 5
Ingress Protection per IEC 60 529	IP 65 and IP 67	IP 65 and IP 67
	The ingress protection classes specified only apply while the pressure transmitter is connected with female connectors that provide the corresponding ingress protection.	



Legend:

U+	Positive supply connection
U-	Negative supply connection
SP1	Switching point 1
SP2	Switching point 2
S+	Analog output

Specifications and dimensions given in this datasheet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.



WIKAI Instrument Corporation
 1000 Wiegand Boulevard
 Lawrenceville, GA 30043
 Tel (770) 513-8200 Toll-free 1-888-WIKA-USA
 Fax (770) 338-5118
 E-Mail info@wika.com
 www.wika.com