Application Note

Honeywell Pressure Switches
High Pressure: HP Series, HE Series
Medium Pressure: ME Series
Low Pressure: LP Series, LE Series

Mud pump line pressure measurement

Background

Due to the demanding conditions found within industrial and transportation industries, pressure switches are often designed into equipment and vehicle applications to make or break an electrical connection in response to a system pressure change. These switches are frequently exposed to chemical splashes, dirt, grime, and harsh media, as well as performance spikes. They must provide reliable and consistent performance and have a high life cycle rating.

Potential Applications

Transportation	
Agricultural machinery	• Hydraulic and braking systems • Engine/transmission oil pressure • Filtration systems
Heavy duty construction machinery	• Hydraulic and braking systems • Engine/transmission oil pressure • Filtration systems
Heavy duty trucks	• Engine/transmission oil pressure • Filtration systems
Lawn and garden	• Engine/transmission oil pressure • Filtration systems
Marine vessels	• Engine/transmission oil pressure • Filtration systems
Material handling machinery	• Hydraulic and braking systems • Engine/transmission oil pressure • Filtration systems
Railway	• Engine/transmission oil pressure • Filtration systems
Industrial	
CNC machines	• Cutting fluid
Compressors, boilers	• Line pressure
Food and beverage equipment	• Line pressure
Fracking equipment	• Line pressure
Generators	• Oil pressure
HVAC/R equipment	• Air pressure
Mud pumps	• Line pressure
Pneumatic equipment	• Air pressure
Presses and punches	• Hydraulic pressure
Pressure washers	• Water pressure
Trash compactors	• Hydraulic oil pressure
Water jet cutting machines	• Water pressure
Water pumps	• Lift pressure

Application Note
Honeywell Pressure Switches

Hydraulic and braking systems

Solution

Honeywell Pressure Switches are durable, reliable electromechanical gauge pressure on/off switches that are available with either single pole single throw (SPST) normally open or normally closed circuitry, or single pole double throw (SPDT) circuitry. Their IP67 environmental sealing and high proof pressure and burst pressure ratings allow for use in many rugged applications that require the making or breaking of an electrical connection in response to a pressure change of the system media.

The media (gas or liquid) pressure is applied via the port of the switch to a diaphragm or sealed piston. A pre-tensioned spring on the other side of the sealed piston or diaphragm controls the set-point pressure. If the force resulting from the pressure is greater than the tension on the spring, the electrical contacts within the switch will change state. If the contacts are normally open when no pressure is applied, they close on increasing pressure when the set point is reached. On decreasing pressure, the contacts will open again at a pressure somewhat less than the set switching point. The difference between the activation point on increasing pressure and the deactivation point on decreasing pressure is called hysteresis. The set point pressure for the switch can be configured such that the switch will actuate on increasing or decreasing system pressure.

Features

- Pressure switching set point range: varies by Series; see datasheet
- Proof pressure: varies by Series; see datasheet
- Burst pressure: varies by Series; see datasheet
- Life cycle rating up to 2 million
- IP67 sealing rating (HP, HE, LP, LE, ME Series)
- Operating temperature range -40 °C to 120 °C [-40 °F to 248 °F]
- Hysteresis option (HP, HE, LP Series)
- Variety of pressure ports and electrical terminations
- Switching point accuracy up to ±2 %

Application Note
Honeywell Pressure Switches

Selection Guide

Honeywell offers five Series from which to choose:

	High Pressure: HP Series, HE Series	Medium Pressure: ME Series	Low Pressure: LP Series, LE Series
			
Life cycle rating	2 million (Base Style A) 1 million (Base Style B)	1 million	up to 2 million
Pressure switching set point range	HP Series: 100 psi to 4500 psi HE Series: 150 psi to 4500 psi	25 psi to 350 psi	3.5 psi to 150 psi
Burst pressure	20,000 psi (Base Style A) 9,000 psi (Base Style B)	8000 psi	1250 psi
Proof pressure	10,000 psi (Base Style A) 6,500 psi (Base Style B)	4,000 psi	500 psi
Operating temperature range	HP Series: -40 °C to 120 °C [-40 °F to 248 °F] HE Series: -40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 120 °C [-40 °F to 248 °F]	-40 °C to 120 °C [-40 °F to 248 °F]
Contact ratings	HP Series: 5 A at 250 Vac 5 A at 24 Vdc HE Series: 5 A at 250 Vac 3 A at 24 Vdc	7.5 mA to 5 A, 24 Vdc and 250 Vac	7.5 mA to 5 A, 24 Vdc and 250 Vac

For more information about Honeywell Pressure Switches, including nomenclature and dimensional drawings, see our Datasheet.

Find out more

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office.
To learn more about Honeywell's sensing and control products, call **+1-815-235-6847 or 1-800-537-6945,** visit **sensing.honeywell.com,** or e-mail inquiries to **info.sc@honeywell.com**

Sensing and Productivity Solutions
Honeywell
1985 Douglas Drive North
Golden Valley, MN 55422
honeywell.com

009605-4-EN IL50 GLO
November 2015