

Commercial Pressure Switches Class 9013, Type F and Type G—Description

The Class 9013 Type F line of pressure switches are UL Listed and CSA Certified as commercial control equipment. The Class 9013 Type G line of pressure switches are UL Listed and CSA Certified as commercial/light industrial control equipment.

The Type FHG - PUMPTROL® Compressor Pressure Switch is used to control electrically driven air compressors and is diaphragm actuated and has contacts that open on rising pressure.



**Type FHG - PUMPTROL®
Compressor Pressure Switch**

The Type FSG, FYG, FRG - PUMPTROL® Water Pump Pressure Switches are used to control electrically driven water pumps and have the following features:

- The Type FSG is the standard water pump switch, suitable for all types of pumps: jets, submersible, reciprocating, etc.
- The Type FYG is designed to meet higher horsepower and pressure requirements.
- The Type FRG is reverse acting: the contacts open on falling pressure.
- All are diaphragm actuated.



**Type FSG, FYG, FRG - PUMPTROL®
Water Pump Pressure Switch**

The Type G - PUMPTROL® Commercial/Light Industrial Pressure Switch is used to control electrically driven water pumps and air compressors. It has higher electrical ratings for direct control of motors in pump and compressor applications. The Type G switch is diaphragm actuated and has contacts that open on rising pressure.



**Type G - PUMPTROL®
Commercial/Light Industrial
Pressure Switch
shown with Form X release valve**

Commercial Pressure Switches Class 9013, Type F and Type G – Specifications

Electrical Ratings

Switch Type	Voltage	Single Phase AC (Hp)	Polyphase AC ▲ (Hp)	DC (Hp)	Control Circuit Rating
FHG2, 3, 4, 9, 12 13, 14, 19, 42, 44, 49 FSG, FSW	115 230 460/575	1 1/2 2 –	2 3 1	1/4■ 1/4■ –	A600
FHG22, 24, 29, 32, 33 34, 39, 52, 54, 59 FYG, FYW	115 230 460/575	2 3 –	3 5 1	1/2★ 1/2★ –	A600
FRG One Pole All Form H	32 115 230	– 1 1	– – –	– 1/4 1/4	A300
FRG Two Pole	32 115 230	– 1 1	– 1 1	– 1/4 1/4	A300
All 9013G Form H	115 230 460/575	1 2 2	– – –	1/2 1/2 –	A600
All 9013G Except Form H	115 230 460/575	2 3 5	3 5 5	1 1 –	A600

- DC Rating does not apply to Form M4.
- ★ 600 volt DC rating does not apply.
- ▲ See 1993 NEC Article 430-84

Temperature Ratings ♦

Media	Ambient
Minimum -22 °F (-30 °C)	Minimum -22 °F (-30 °C)
Maximum +257 °F (+125 °C)	Maximum +158 °F (+70 °C)

- ♦ FSG and FYG 32 °F (0 °C) minimum

Maximum Allowable Pressure

Type	Pressure (psig)
FHG, FSG, FYG, FSW, FYW	220
FRG, GHB, GHG, GSB, GSG	300
GMG, GSR, GSW	100
GHR, GHW	250

Type FHG - PUMPTROL® Compressor Pressure Switch



File E12158 CCN NKPZ



File LR 25490 Class 3211 06

Type FSG, FYG, FRG - PUMPTROL® Water Pump Pressure Switch



File E12158 CCN NKPZ



File LR 25490 Class 3211 06

Type G - PUMPTROL® Commercial/Light Industrial Pressure Switch



File E12158 CCN NKPZ
Except GHR and GSR



File LR 25490 Class 3211 06
Except GHR and GSR



File E12443 CCN NOWT
For GHR and GSR



File LR 26817 Class 3218 05
For GHR and GSR



Commercial Pressure Switches

Class 9013, Type F and Type G – Technical Overview

Operating Points (Settings)

Every pressure switch has two operating points; one on rising pressure and one of falling pressure. The operating point on rising pressure is referred to as the TRIP POINT or cut out for pumps and compressors and the operating point on falling pressure is referred to as the RESET POINT or cut in for pumps and compressors. These operating points are called the SETTINGS of the switch.

- TRIP POINT (rising pressure)
- RESET POINT (falling pressure)

Differential

The differential is the difference in pressure between the trip point (cut-out) and the reset point (cut-in). It can be adjustable or nonadjustable (fixed). Example:

Cut-in	30 psi
Cut-out	50 psi
Differential	20 psi (50-30 psi)

Range

The range is the pressure limits within which the operating points (settings) can be adjusted. The range of the Class 9013 pressure switch is referenced to the operating point on rising pressure (trip point). The differential subtracts from the trip point setting.

During the normal operating cycle, system pressure should never exceed the upper limit of the range when using a diaphragm actuated switch. This will greatly reduce the life of the diaphragm.

Maximum Allowable Pressure

Maximum allowable pressure is the pressure to which a switch can be subjected without causing a change in operating characteristics, shift in settings, or damage to the device.

Pressure surges may occur in a system during the start up of a machine or from valve operation. Surges are not normally detrimental to the life of a switch if the surge is within the maximum allowable pressure rating of the switch. Diaphragm actuated switches should not be subjected to more than 10 surges per day. More frequent surges will greatly reduce the life of the diaphragm.