

**FHG Pressure Switch Selection and Features**

Class 9013 Type FHG pressure switches are designed for the control of small electrically driven air compressors.

- Contacts open on pressure rise.
- Diaphragm actuated.
- For application data, see page 22-19.
- For repair parts kits, see page 22-34.

**Table 22.70: Dimensions, Type F (Net Weight, 1-1/8 lb)**

Switch Type	A	
	in.	mm
FHG2, 12, 22, 32, 42, 52 / FRG2, FSG2, FYG2	2-29/32	23
FHG3, 13, 33 / FRG3, FSG3, FYG3	1-9/32	33
FHG9, 19, 29, 39, 49, 59 / FSG9, FYG9	1-3/32	28

**Table 22.71: Special Features and Modifications for Type FHG<sup>[1]</sup>**

Description	Form
Bulk pack	[2]
Addition of a second ground screw	G4[3]
Maintained manual cut-out lever (Auto-Off)	M1
Pulsation plug—factory order only (available only on 1/4-inch fittings, not to include 4-way)	P
Slip-on connectors (load side terminals only)	U
Slip-on connectors (line and load terminals)	U2
Two-way pressure release valve	X
Quick connect two-way pressure release valve (for use with Polyflow® tubing)	X1
Black cover	Z22

**Table 22.73: Pressure Code (fixed differential)<sup>[1]</sup>**

Off at...	Code A
80 psi	J43
100 psi	J27
110 psi	J37
115 psi	J38
120 psi	J69
125 psi	J52
135 psi	J39
140 psi	J68
155 psi	J40
150 psi	J55
175 psi	J59
Specify other pressure (minimum order quantity is 4 pieces)	J99

**NOTE:** The existence of a code does not imply that the code is available for any or all devices.

**Table 22.72: Selection Table**

Adjustable Cut-out Range Increasing Pressure (psig)	Approximate-Differential Fixed (psig)	Poles	PressureConnec-tion	NEMA 1 Enclosure	
				Lower hp	Higher hp
				Catalog No.	Catalog No.
40-100	20	2	1/4" NPSF internal	9013FHG2	9013FHG22
			3/8" NPSF internal	9013FHG3	—
			1/4" four way	9013FHG4	9013FHG24
70-150	30	2	1/4" NPT external	9013FHG9	9013FHG29
			1/4" NPSF internal	9013FHG12	9013FHG32
			3/8" NPSF internal	9013FHG13	9013FHG33
100-200	40	2	1/4" four way	9013FHG14	9013FHG34
			1/4" NPT external	9013FHG19	9013FHG39
			1/4" NPSF internal	9013FHG42	9013FHG52
			1/4" four way	9013FHG44	9013FHG54
			1/4" NPT external	9013FHG49	9013FHG59

**Table 22.74: Electrical Ratings For All 9013 Switches**

Switch Type	Voltage	Single Phase AC	Polyphase AC <sup>[4]</sup>	DC	Control Circuit Rating
FHG2, 9, 12, 13, 14, 19, 42, 43, 44, 49 FSG, FSW	115	1-1/2 hp	2 hp	1/4 hp <sup>[5]</sup>	A600
	230	2 hp	3 hp	1/4 hp <sup>[5]</sup>	
	460/575	—	1 hp	—	
FHG22, 29, 32, 33, 34, 39, 52, 54, 59 FYG, FYW	115	2 hp	3 hp	1/2 hp <sup>[6]</sup>	A600
	230	3 hp	5 hp	1/2 hp <sup>[6]</sup>	
	460/575	—	1 hp	—	
FRG One Pole (All Form H)	32	—	—	—	A300
	115	1 hp	—	1/4 hp	
	230	1 hp	—	1/4 hp	
FRG Two Pole	32	—	—	1/4 hp	A300
	115	1 hp	1 hp	1/4 hp	
	230	1 hp	1 hp	1/4 hp	
All 9013G Form H	115	1 hp	—	1/2 hp	A600
	230	2 hp	—	1/2 hp	
	460/575	2 hp	—	—	
All 9013G, except Form H	115	2 hp	3 hp	1 hp	A600
	230	3 hp	5 hp	1 hp	
	460/575	1 hp	1 hp	—	

**Ordering Information**

- Specify Class 9013 Type FHG.
- Select pressure code from the table entitled Pressure Code (fixed differential) on the left side of the page, and add the code designation to end of the Type number. Ensure that the pressure rating of the code falls within the limits of the device as shown in Table 22.72, page 22-23.
- To order special features as shown in Table 22.71, add the appropriate Form designation to the Class and Type. Arrange Forms in alphabetical order when specifying more than one feature or modification. Accessories: page 22-26



**NOTE:** If conduit or pressure line is rigid, UL; if both are flexible, UR.

[1] Some product configurations are not available—contact your Schneider Electric representative for details.  
 [2] For bulk package quantities and Form numbers, see on page 22-24. If a Form is not specified, devices will be shipped individually packaged.  
 [3] Can be field installed. Nameplate should then be marked with the Form letter and maintenance and ordering records corrected.  
 [4] See 1993 NEC Article 430-84  
 [5] DC rating does not apply to Form M4.  
 [6] 1/4 hp with Form M1.



Table 22.75: Pressure Codes [7]

Standard Action Devices		Reverse Action Devices	
Settings	Code	Settings	Code
5–21 psi	J15	10–5 psi	J36
8–20 psi	J16	22–12 psi	J22
20–40 psi	J20	22–16 psi	J19
20–50 psi	J18	35–20 psi	J70
30–50 psi	J21	40–20 psi	J23
40–60 psi	J24	50–30 psi	J35
50–70 psi	J33	150–120 psi	J64[8]
60–80 psi	J25	Specify other pressure	J99[8]
Specify other pressure	J99[8]	Specify other pressure	J99[8]

Table 22.77: Maximum Allowable Pressure for All 9013 Switches

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

Table 22.78: Temperature Limitations for All 9013 Switches

Operation (Media)	Storage
–36 to +125 °C (–33 °F to +257 °F)	–36 to +125 °C (–33 to +257 °F)

Type F Pressure Switch Selection and Features

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

Table 22.76: Standard Action: Contacts Open On Rising Pressure

Cut-out Range (psig)	Approximate Adjustable Differential (psig)	Cut-in Range (psig)	Pressure Connection	2 Pole	
				NEMA 1 Catalog No.	NEMA 3R[9]
20–65	15–30	5–45	1/4" NPSF internal	9013FSG2	9013FSW2
			1/4" NPT external	9013FSG9	9013FSW9
			1/4" bayonet (barbed)	9013FSG10	9013FSW10
20–50	10–30	10–30	1/4" NPSF internal	9013FSG22	9013FSW22
20–60	10–30	10–45	1/4" NPT external	9013FSG29	9013FSW29
9–30	6–20	3–10	1/4" NPSF internal	9013FSG42	9013FSW42
9–30	6–20	3–10	1/4" NPT external	9013FSG49	9013FSW49
25–80	20–30	5–60	1/4" NPSF internal	9013FSG52	—
			1/4" NPT external	9013FSG59	—
34–65	15–30	19–45	(FSG1 through 20 with Form M4 is only available in this range)		
25–80	20–30	5–60	1/4" NPSF internal	9013FYG2	9013FYW2
			1/4" NPT external	9013FYG9	9013FYW9
			1/4" bayonet (barbed)	9013FYG10	9013FYW10
39–80	20–30	19–60	(FYG1 through 20 with Form M4 is only available in this range)		
20–50	10–30	10–30	1/4" NPSF internal	9013FYG22	9013FYW22
20–60	10–30	10–45	1/4" NPT external	9013FYG29	9013FYW29
9–40	6–30	3–10	1/4" NPSF internal	9013FYG42	9013FYW42
9–40	6–30	3–10	1/4" NPT external	9013FYG49	9013FYW49

Table 22.79: Reverse Action: Contacts Open On Falling Pressure

Cut-in Range (psig)	Approximate Adjustable Differential (psig)	Cut-out Range (psig)	Pressure Connection	Catalog Number	
				1-Pole	2-Pole
23–65	15–30	8–45	1/4" NPSF internal	9013FRG12	9013FRG2
			3/8" NPSF internal	9013FRG13	9013FRG3
			1/4" NPT external	9013FRG19	9013FRG9
10–45	6–20	4–25	1/4" NPSF internal	9013FRG32	9013FRG22
			3/8" NPSF internal	9013FRG33	9013FRG23
			1/4" NPT external	9013FRG39	9013FRG29
6–14	5, Fixed	1–9	1/4" NPSF internal	9013FRG52	9013FRG42
			3/8" NPSF internal	9013FRG53	9013FRG43
40–100	20–30	20–80	1/4" NPT external	9013FRG59	9013FRG49
			1/4" NPSF internal	9013FRG72	9013FRG62
			3/8" NPSF internal	9013FRG73	9013FRG63
65–150	30–45	35–120	1/4" NPSF internal	9013FRG92	9013FRG82
			3/8" NPSF internal	9013FRG93	9013FRG83
			1/4" NPT external	9013FRG99	9013FRG89

Ordering Information

- Specify Class 9013 Type F.
- Select the pressure code from Table 22.75, and add the code designation to the end of the Type number. Ensure that the pressure rating of the code falls within the limits of the device as shown in Table 22.76 and Table 22.79.
- To order special features from Table 22.80, add the appropriate Form letter to the Class and Type. Arrange the Form letters in alphabetical order when ordering more than one special feature.

See also:

- Electrical Ratings For All 9013 Switches, page 22-23
- Dimensions, Type F, page 22-23
- Renewal Parts for Class 9012–9038 Devices, page 22-34

[7] Existence of a code does not imply that the code is available for any or all devices.

[8] Minimum order quantity is 4 pieces.

[9] Must be mounted in vertical position to maintain enclosure rating.



File E12158 CCN NKPZ



File LR25490

**NOTE:** Products on this page are UL Listed, however type numbers ending in 8, 10 or 20 (non rigid pressure lines) must have Form T or TI—otherwise these are UL component recognized.

**Table 22.80: Special Features and Modifications for Type FSG, FYG & FRG Devices**

Description	Applies to Types	Form
Bulk package	All Type F	[11]
One normally open—one normally closed contact	FRG 2-Pole only	H
Maintained manual cut-out lever (Auto-Off)	FSG, FYG	M1
Momentary manual cut-in lever (Auto-Start)	FRG2-59 only	M3
Low pressure cut-off (Auto-Start-Off) – Operates at approximately 10 psig below cut-in and will turn off the pump	FSG, FYG	M4
Maintained manual cut-in lever (Auto-On)	FRG2-59 only	M5
Pulsation plug (Type 2 & 9 only)	FRG, FSG, FYG	P[12]
Plastic flange (max. temp. 120 °F) (max. pressure 80 psi) Available only on Types FSG2, FYG2, FRG2, FSG*2, FYG*2, FRG*2	FSG*, FYG*, FRG* 1/4" NPSF internal only	Q8
1/2" conduit bushing, 1/2" long thread—on left	All Type F	T
Slip-on connectors (load side terminals <i>only</i> )	FSG, FYG	U
Slip-on connectors (line <i>and</i> load terminals)	FSG, FYG	U2
Black cover	FSG, FYG	Z22

**Table 22.81: Bulk Package Form Numbers for 9013F Pressure Switches**

Description	Bulk Package Quantity					
	16	20	40	50	400	500
Product without Forms M1, M3, M4, M5, T, X1	9013FHG (without 1/4" four-way)	—	C20	—	C50	—
	9013FHG4, 14, 24, 34, 44, 54 (with 1/4" four-way)	—	C20	—	C50	C400
	9013FRG	—	C20	—	C50	—
	9013FSG	—	C20	—	C50	—
	9013FYG	—	C20	—	C50	—
Product with Forms M1, M3, M4, M5	9013FHG (without 1/4" four-way)	—	C20	C40	—	—
	9013FHG4, 14, 24, 34, 44, 54 (with 1/4" four-way)	—	C20	C40	—	—
	9013FRG	—	C20	C40	—	—
	9013FSG	—	C20	C40	—	—
	9013FYG	—	C20	C40	—	—
Product with Forms T, X1	9013FHG (without 1/4" four-way)	C16	—	C40	—	—
	9013FHG4, 14, 24, 34, 44, 54 (with 1/4" four-way)	C16	—	C40	—	—
	9013FRG	C16	—	C40	—	—
	9013FSG	C16	—	C40	—	—
	9013FYG	C16	—	C40	—	—
9013FHG9 Special with Extended Flange	C16	—	—	—	—	C500

[10] Some product configurations are not available—contact your Schneider Electric representative for details.

[11] For bulk package quantities and Form numbers, see on page 22-24. If a Form is not specified, devices will be shipped individually packaged.

[12] Nylon pulsation plug can be field installed on types having 1/4" NPSF internal connector. Part number 1530S6G1 is one bag of 50 plugs.



Shown with Form X



File E12158  
CCN NKPZ  
File E12443 Haz Loc  
CCN NOWT



File 25490  
File 26817  
Haz. Loc.

Table 22.82: Pressure Codes

Code	Pressure Setting (Close-Open), psi
J20	20–40
J21	30–50
J23	40–20 (reverse action)
J24	40–60
J25	60–80
J26	70–90
J28	70–100
J29	75–100
J30	80–100
J31	90–120
J50	135–175
J51	100–80 (reverse action)
J53	100–125
J54	110–125
J56	110–150
J57	120–150
J58	125–150
J60	125–175
J61	130–175
J62	140–175
J63	145–175
J64	150–120 (reverse action)
J65	215–250
J99	Specify the required setting

Table 22.83: Special Features and Modifications

Description	Form
3-Way Lever (On-Auto-Off)	E
One Normally Open / One Normally Closed Contact	H
Pulsation Plug	P
Reverse Action	R
Slip-On Connectors (Load Side Terminals Only)	U
Slip-On Connectors (Line and Load Terminals)	U2
Two-Way Pressure Release Valve	X
1/4" Male Pipe Thread on Pressure Connection	Z
1/2"-14 NPT External, 1/4"-18 NPT Internal	Z16

Type G Pressure Switch Selection and Features

Class 9013 Type G Pumptrol pressure switches are designed to control electrically driven water pumps and air compressors. These devices cover higher electrical ratings for directly controlling motors in pump and compressor applications.

- Contacts open on pressure rise.
- Diaphragm actuated.
- For electrical ratings, see Table 22.74.
- For repair parts kits, see page 22-34.

Table 22.84: Selection Tables

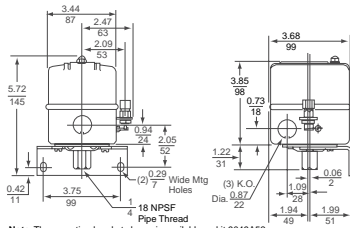
Cut-out Range (psig)	Approximate Adjustable Differential (psig)	Cut-in Range (psig)	Enclosure	Poles	NPSF Internal Pressure Connection	Catalog No.
10–35	4–8	5.5–30.5	NEMA 1 (General Purpose)	2	1/4	9013GMG2
20–80	15–30	5–60	NEMA 3R [13] (Rainproof)	2	1/4	9013GSB2
20–80	15–30	5–60	NEMA 1 (General Purpose)	2	1/8	9013GSG1
					1/4	9013GSG2
					3/8	9013GSG3
20–80	20–40	5–50	NEMA 7 & 9 (Hazardous Locations)	2	1/8	9013GSR1
					1/4	9013GSR2
			NEMA 4 (Watertight)		3/8	9013GSR3
					1/8	9013GSW1
					1/4	9013GSW2
65–200	20–40	40–170	NEMA 3R [13] (Rainproof)	2	1/4	9013GHB2
65–200	20–40	40–170	NEMA 1 (General Purpose)	2	1/8	9013GHG1
					1/4	9013GHG2
					3/8	9013GHG3
65–200	30–50	35–150	NEMA 7 & 9 (Hazardous Locations)	2	1/8	9013GHR1
					1/4	9013GHR2
			NEMA 4 (Watertight)		3/8	9013GHR3
					1/8	9013GHW1
					1/4	9013GHW2
80–250	25–45	32–215	NEMA 3R [13] (Rainproof)	2	1/4	9013GHB5
80–250	24–45	32–215	NEMA 1 (General Purpose)	2	1/8	9013GHG4
					1/4	9013GHG5
					3/8	9013GHG6
80–250	40–60	30–190	NEMA 7 & 9 (Hazardous Locations)	2	1/8	9013GHR4
					1/4	9013GHR5
			NEMA 4 (Watertight)		3/8	9013GHR6
					1/8	9013GHW4
					1/4	9013GHW5
					3/8	9013GHW6

NOTE: Some product configurations are not available. Contact your Schneider Electric representative for details.

Ordering Information

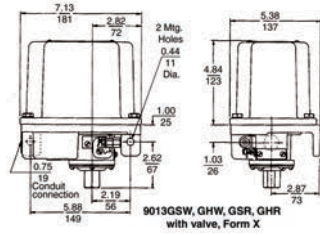
- Specify Class 9013 Type G.
- Select the pressure code from Table 22.82, and add the code to the end of the Type number. Ensure that the pressure rating of the code falls within the limits of the device. See Table 22.84.
- To order special features, add the appropriate Form letter to the Class and Type. Arrange Form letters in alphabetical order when ordering more than one special feature.

[13] Must be mounted in vertical position to maintain enclosure rating.



Note: The mounting bracket shown is available as kit 9049A52.

**9013GHG, GSG - with or without Form X**



**9013GSW, GHW, GSR, GHR with valve, Form X**

**Table 22.85: Special Features and Modifications for Type G Devices [14]**

Description	Applies to	Form
Standard pack of 10 switches[15]	All Type G	C10
3-way lever (On-Auto-Off) (not compatible with Form X)	GHG, GMG, GSG	E
1 N.O., 1 N.C. contact	All Type G	H
Pulsation plug (not field replaceable.)	All Type G	P
Reverse action (Select pressure code from Table 22.79)	All Type G	R
Slip-on connectors (load side terminals only)	All Type G	U
Slip-on connectors (line and load terminals)	All Type G	U2
Two-way pressure release valve (Not compatible with Form E)	GHB, GMG, GSB, GHG, GSG GHR, GHW, GSR, GSW	X
1/4" male pipe thread on pressure connection	All Type G	Z
1/2"-14 NPT external 1/4"-18 NPT internal[16]	All Type G	Z16

**Table 22.86: Class 9049 Accessories for Class 9013 Pressure Switches**

Description	Applies to Class	Catalog No.
Two-way pressure release valve, replacement only. Cannot be added to switch that originally had no valve.	9013GHG, GSG, Form X only	9049A12
Mtg. bracket—replacing obsolete 9013A with 9013G	9013GHG, GSG	9049A52
Mtg. bracket—replacing obsolete 9013A with 9013G, or for current 9016GVG	9013GMG, 9016GVG	9049A53
Two-way pressure release valve. Replacement only. Cannot be added to switch that originally had no valve.	9013FHG, Form X only	9049A56

[14] Some product configurations are not available—contact your Schneider Electric representative for details.

[15] Available on GHB, GHG, GSB, and GSG.

If Form C10 is not specified, devices will be shipped individually packaged

[16] UL Listed industrial control equipment.