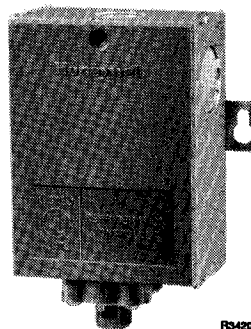
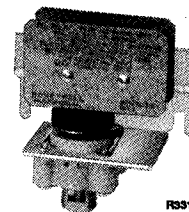


P658A-F PNEUMATIC-ELECTRIC SWITCHES



P658A



P658B, C

GENERAL

DESCRIPTION

This sheet provides information on servicing and repairing P658A-F Pneumatic-Electric Switches. The repair section shows orderable parts for field repair. Only those items which include an identifying part number are orderable.

The P658A includes a case and cover and is surface mounted. The P658B through E are internal panel mounted using screws and a bracket. The P658F is internal panel mounted through a double D-hole in the electrical case using a hex nut.

The P658D is an inactive device and should be replaced with a newer device.

No special tools are required to service or repair these devices.

APPLICATION

The P658 converts a pneumatic signal from a controller or other pneumatic device to a two-position electric switch

action. This switching action is used to provide on/off control of fans, pumps, electric heaters, etc., found in mechanical systems.

The spdt switch action can also be used to energize alarm systems, provide interlock functions, or other pneumatic to electric interface operations.

The P658C is intended for use with DeltaNet systems or any system requiring low-impedance switching for monitoring status.

OPERATION

The spdt switch transfers from R-W to R-B (breaks COM to N.O. and makes COM to N.C.) on a drop in input pressure below the setpoint. Reverse switching occurs on a rise above the setpoint. The switch transfers from R-B to R-W (breaks COM to N.C. and makes COM to N.O.). Refer to the SPECIFICATIONS section for details on specific models.

SPECIFICATIONS

Models:

Model	Switch Action	Setpoint in psi (kPa)		Differential (Fixed) in psi (kPa)
		Factory Set	Field Adjustable	
P658A	*	2, 4, 10, or 14 (14, 28, 69, or 97)	2 to 24 (14 to 165)	2 (14)
P658B	*	4, 7, 8, 10, 13, or 14 (28, 48, 55, 69, 90, or 97)		
P658C	*	10 (69)		1.5 (10)
P658D†	*	8, 10, 12, or 14 (55, 69, 83, or 97)		2 (14)
P658E	§	7, 8, 10, 12, or 13 (48, 55, 69, 83, or 90)	2 to 17 (14 to 117)	1 (7)
		14 (97)	2 to 24 (14 to 165)	
		No	2 to 17 (14 to 117)	
		No	12 to 25 (83 to 172)	
P658F	§	** 10 or 13 (69 or 90)	2 to 17 (14 to 117)	1 (7)
		6, 8, or 10 (41, 55, or 69)	2 to 17 (14 to 117)	
		No	2 to 17 (14 to 117)	
		No	7 to 21 (48 to 145)	
P658F	§	No	12 to 25 (83 to 172)	1 (7)
		No	7 to 21 (48 to 145)	
		No	2 to 17 (14 to 117)	
		No	12 to 25 (83 to 172)	

* Makes R to B and breaks R to W on a pressure fall to the setpoint; makes R to W and breaks R to B on a pressure rise to the setpoint plus the differential.

† Inactive device.

§ Makes COM to N. C. and breaks COM to N. O. on a pressure fall to the setpoint; makes COM to N. O. and breaks COM to N. C. on a pressure rise to the setpoint plus the differential.

** Makes COM to N. O. and breaks COM to N. C. on a pressure rise to the setpoint; makes COM to N. C. and breaks COM to N. O. on a pressure fall to the setpoint minus the differential.

Environmental Limits:

Operating Temperature Range:

P658A, C: -20 to 140F (-29 to 60C)

P658B: -20 to 160F (-29 to 71C)

P658D: -20 to 160F (-29 to 71C)

P658E-F: UL tested to 160F (71C) maximum; 40 to 140F (4 to 60C) recommended.

Operating Humidity Range: 5 to 95% rh; 80F (27C) maximum wet-bulb temperature

Switch Rating:

Model	Motor Load	Pilot Duty	Resistive Load
P658A, B	1 hp at 125V ac 2 hp at 250 or 277V ac	750 VA at 125, 250, or 277V ac	25A at 125, 250, or 480V ac
P658E, F	3/4- hp at 125, 250, or 277V ac	720 VA at 125, 250, or 277V ac	25A at 125, 250, or 277V ac; 10A at 480V ac

Model	Motor Load at 75 to 80% Power Factor	Locked Rotor at 40 to 50% Power Factor	Resistive Load
P658D*	1 hp at 125V ac 2 hp at 250 or 277V ac	96A at 120V 72A at 240V 72A at 277V	20A at 125 to 480V ac; 25A at 277V ac

*Inactive device.

Model	Low Impedance Switching
P658C	5mA at 5V dc

TROUBLESHOOTING

Inspect the P658 to determine that the setpoint or adjustable range (marked on coverplate) is correct for the application.

Increasing or decreasing the branchline pressure above or below the setpoint of the P658 should cause the switch to cycle the load. See SPECIFICATIONS section for switch rating. Determine that the load connected to the switch is within the limits of the switch. Overloading will destroy or shorten the life of the switch. If the switch is found to be defective, refer to the REPAIR section for replacement.

To adjust the setpoint, if required, turn the adjustment wheel (Fig. 1) clockwise (as viewed from the top looking down) to increase the setpoint; to decrease setpoint, rotate the adjustment wheel counterclockwise. One full turn of the adjustment wheel changes the setpoint 9 psi (62 kPa).

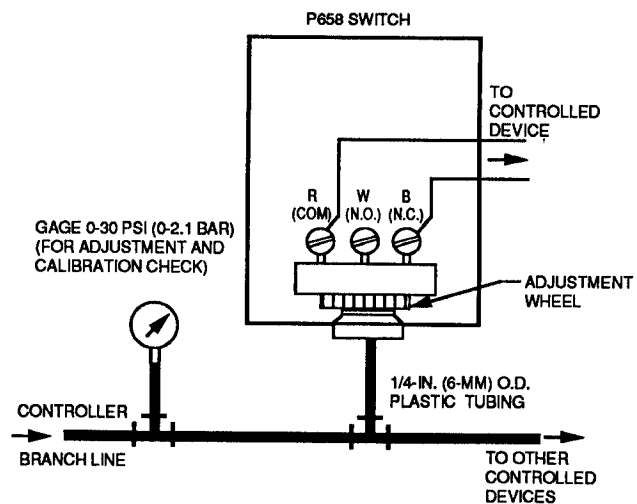
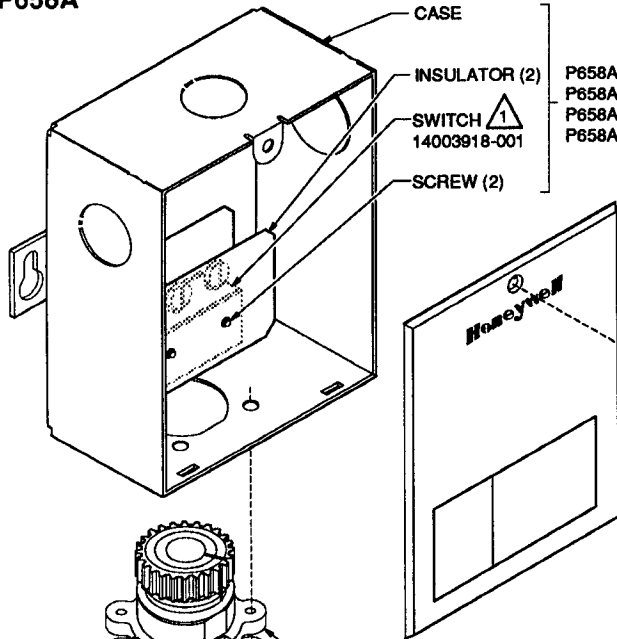


Fig. 1. P658 Setpoint Adjustment.

REPAIR

P658A



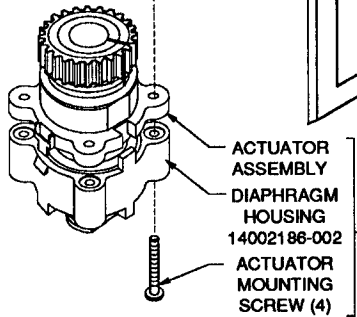
CASE AND SWITCH ASSEMBLY ²

- P658A1005 — PART NO. 14002179-001 (4 PSI SETPOINT)
- P658A1013 — PART NO. 14002179-002 (10 PSI SETPOINT)
- P658A1021 — PART NO. 14002179-003 (14 PSI SETPOINT)
- P658A1039 — PART NO. 14002179-004 (2 PSI SETPOINT)

- ¹ USE IF SWITCH IS REMOVABLE
- ² USE IF CASE AND SWITCH ASSEMBLY IS RIVETED

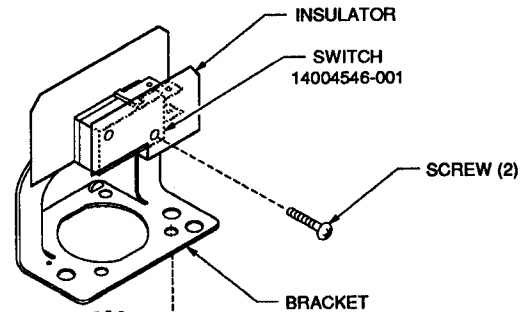
COVER 14002180-001

COVER MOUNTING SCREW
6 - 32 X 1/4-IN. PAN HEAD



ORDER
PART NO.
14002507-001

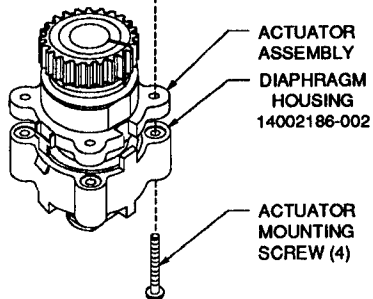
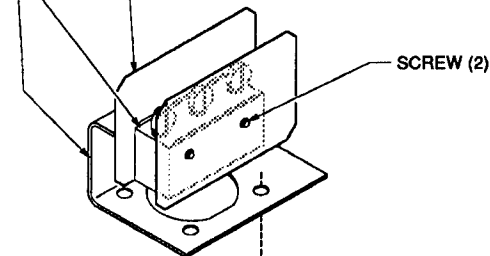
P658E & F (P6586F SHOWN)



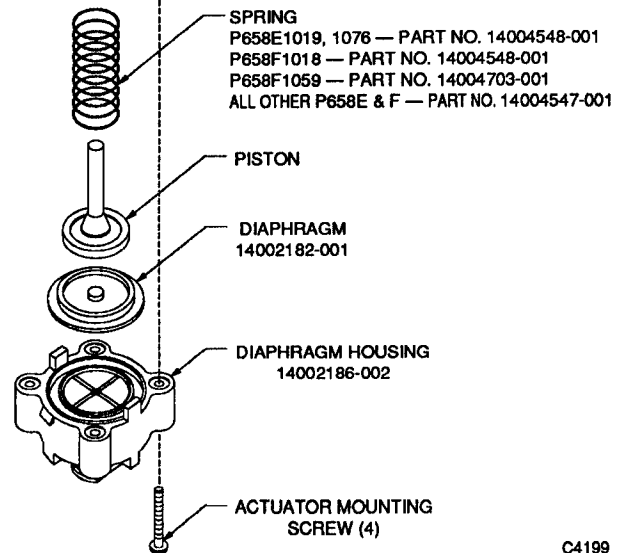
P658B & C

SWITCH AND BRACKET ASSEMBLY

- BRACKET P658B1004 — PART NO. 14002189-001 (4 PSI SETPOINT)
- P658B1012 — PART NO. 14002189-002 (10 PSI SETPOINT)
- P658B1020 — PART NO. 14002189-003 (14 PSI SETPOINT)
- INSULATOR (2) P658B1061 — PART NO. 14002189-008 (8 PSI SETPOINT)
- P658B1079 — PART NO. 14002189-009 (7 PSI SETPOINT)
- P658B1087 — PART NO. 14002189-010 (13 PSI SETPOINT)
- SWITCH P658C1003 — PART NO. 14002189-004 (10 PSI SETPOINT)



ORDER
PART NO.
14002507-001



- SPRING P658E1019, 1076 — PART NO. 14004548-001
- P658F1018 — PART NO. 14004548-001
- P658F1059 — PART NO. 14004703-001
- ALL OTHER P658E & F — PART NO. 14004547-001

C4199

Fig. 2. P658 Repair Parts.

75-7151

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