

LP914A, LP915A Pneumatic Temperature Sensors

SERVICE DATA

GENERAL

Description

The LP914A and LP915A Pneumatic Temperature Sensors are direct acting, proportional-type for use with a pneumatic controller in HVAC systems to control valves and dampers. The LP914A has a rod and tube insertion element for duct-, well-, or through-the-wall-mounting. The LP915A has a liquid-filled averaging element for duct-mounting.

Application

LP914A

Fig. 1 shows a typical application of a duct-mounted LP914A.

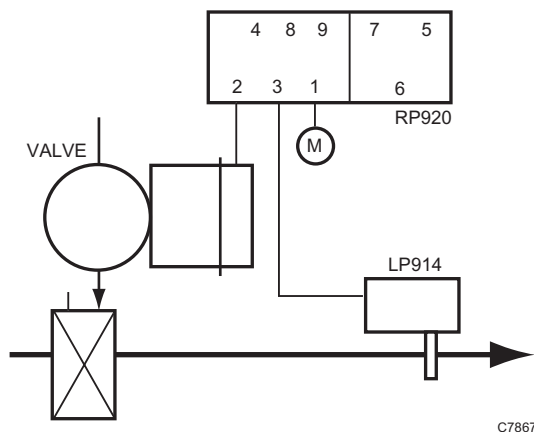


Fig. 1. LP914A typical duct-mounted application.

LP915A

The liquid-filled element of the LP915A is mounted in a duct with capillary clips to sense average air temperature in HVAC systems.

Specifications

Models:

Model No.	Sensing Range (Non-Adjustable) F (C)	Element Length in in. (mm)	Mounting
LP914A1003	-40 to 160 (-40 to 71)	15 (381)	Duct
LP914A1011	-40 to 160 (-40 to 71)	27 (685) ^a	Wall
LP914A1029	40 to 240 (4 to 116)	15 (381)	Well
LP914A1037	-40 to 160 (-40 to 71)		
LP914A1045	-40 to 160 (-40 to 71)	7 (178)	Duct
LP914A1052	40 to 240 (4 to 116)	7 (178)	Well
LP914A1060	-40 to 160 (-40 to 71)	7 (178) ^a	
LP914A1110 ^b	-20 to 80 (-29 to 27)	15 (381)	
LP914A1144	25 to 125 (-4 to 52)	15 (381)	Duct
LP914A1243	-20 to 80 (-29 to 27)		
LP914A1250	-20 to 80 (-29 to 27)	27 (685) ^a	Wall
LP914A1268	40 to 240 (4 to 116)	15 (381)	Duct
LP915A1044	0 to 200 (-18 to 93)	18-1/2 ft (5.6m)	
LP915A1051	0 to 200 (-18 to 93)	8-7/8 ft (2.7m)	
LP915A1077	25 to 125 (-4 to 52)	18-1/2 ft (5.6m)	
LP915A1085	25 to 125 (-4 to 52)	8-7/8 ft (2.7m)	

^a Active element 15 in. (381 mm), inert section 12 in. (305 mm).

^b Inactive device.

Maximum Safe Temperature at Element:

LP914A: 265°F (129°C)

LP915A: 225°F (107°C)

Supply Air Pressure: 18 psi (124 kPa).

Maximum Safe Air Pressure: 25 psi (172 kPa).

Pressure Output: 3 to 15 psi (21 to 103 kPa).

Air Consumption: 0.019 scfm (540 sccm).

Air Connections: Push-on barb fitting for 5/32 and 1/4 in. (4 and 6 mm) O.D. tubing.



Operation

Operation is similar for both the LP914 and LP915. An increase in temperature at the sensing element (rod or capillary), causes a proportional increase in branchline pressure to the controller. For example, using the typical application shown in Fig. 1, as branchline pressure from the controller to the normally-closed valve increases, chilled water is circulated through the cooling coil. A decrease in temperature causes a proportional decrease in branchline pressure and closes the valve.

MAINTENANCE

Equipment Required

Commercial cleaning solvent.

Cleaning

Remove any accumulated dust or dirt with a soft brush. A commercial cleaning solvent may be used if needed.

WARNING

Hazard to the respiratory system and skin tissue. Careless handling can result in damage to respiratory system and skin tissue.

Take special care using solvents. Avoid prolonged inhalation and/or contact with skin.

Operational Check

A quick operational check may be performed by raising the temperature at the sensing element. The output pressure should increase. Lowering the temperature should decrease the output pressure.

Adjustment and Calibration

The LP914 and LP915 are factory calibrated and require no adjustment.

CAUTION

Equipment Damage Hazard. Tampering with the sensor can cause improper functioning.

Take care to prevent the sensor element from being dented, damaged, or tampered with in any way. Avoid removing the cover of the sensor.

TROUBLESHOOTING

Sensors are factory calibrated and cannot be recalibrated in the field.

If a sensor is applied to be read over a large range, such as outdoor air, then check the temperature(s) critical to the application:

1. Take accurate temperature readings at sensing element.
2. Read sensor temperature at receiver gage. If difference in readings is unacceptable, adjust gage to read the same as sensed temperature.
3. If not possible to adjust gage to sensed temperature, place a known accurate receiver gage in the sensor branchline.
4. Change temperature of the sensor element by heating or cooling, then allow sensor to slowly return to original temperature.
5. If sensor temperature as read at the gage is too high, replace the sensor.
6. If sensor temperature as read at the gage is too low, inspect and/or change sensor filters and the restriction feeding the sensor. If the problem cannot be corrected, replace the sensor.

REPAIR

Recommended repair for the LP914 and LP915 is replacement of the filters and screen. This is shown in Fig. 2 in the Parts and Accessories section. Device replacement is recommended for any operational problems or damage to the device.

Replacement of Filters and Screen

1. Shut off system air and remove barb fitting from sensor.
2. Remove and discard filters and screen. Replace with new parts.
3. Connect barb fitting and turn on system air.
4. Perform operational check.

PARTS AND ACCESSORIES

Parts List

Table 1. LP914A and LP915A repair parts list (Fig. 2).

Key	Part No.	Description
1	316429	Filter
2	309379	Screen
3	315602	Filter
4	315597	Gasket (LP915)
5	315182	Gasket (LP914 duct mounted)
6	—	Screw, Slotted Hex-Head Drill Point, LP914 (2), LP915 (3)
—	315114A	Bracket—Through-the-wall mounted LP914A (Fig. 4)
—	315115A	Bracket—Well mounted LP914A (Fig. 5)

Accessories

1. Wells (LP914A):
 - a. Copper:
 - 315046A—15-15/32 in. (393 mm) long.
 - 315046B—7-15/32 in. (190 mm) long.
 - b. Stainless Steel:
 - 315904A—15-13/32 in. (391 mm) long.
 - 315904B—7-13/32 in. (188 mm) long.
2. Averaging Element Clip 314439—LP915A (Fig. 3).
3. Outdoor Bulb Shield 311085-00107—through-the-wall-mounted LP914A (Fig. 4)

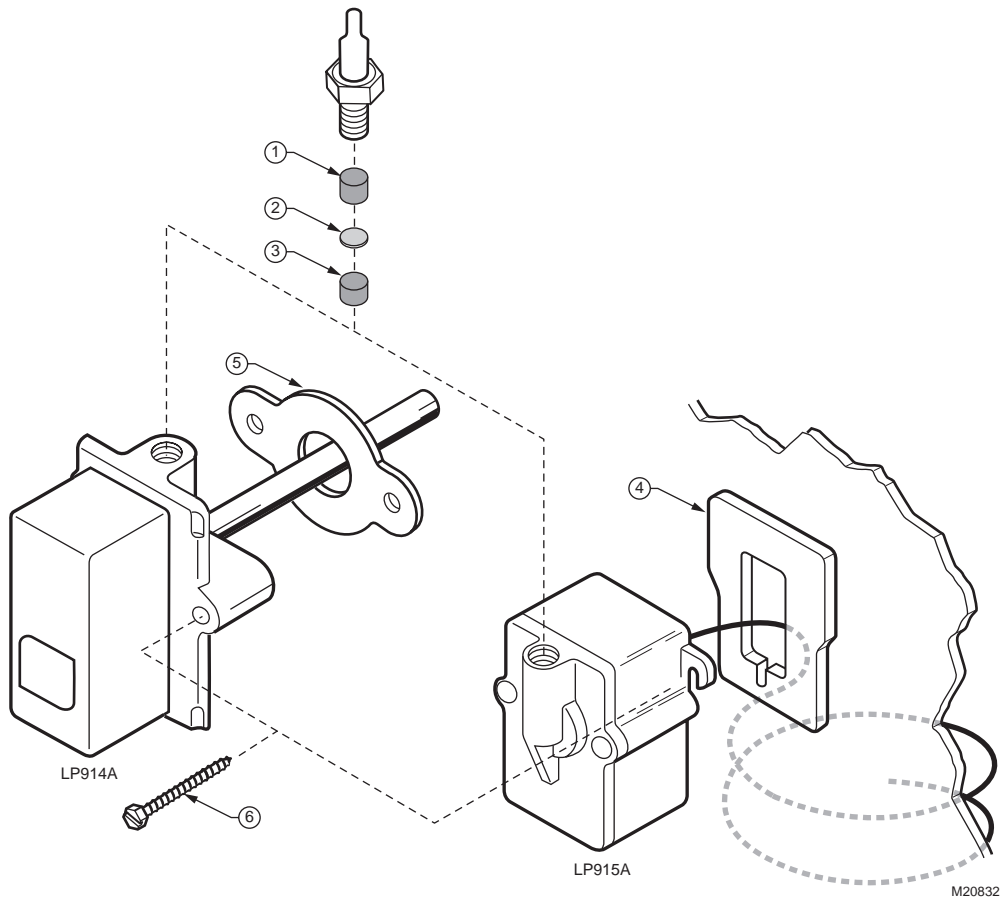


Fig. 2. LP914A and LP915A replacement parts.

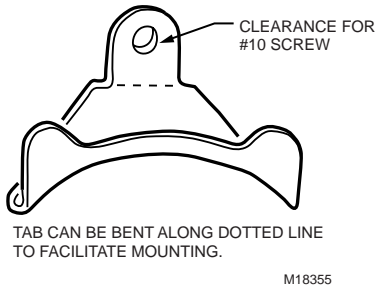


Fig. 3. Capillary clip for duct-mounted LP915A.

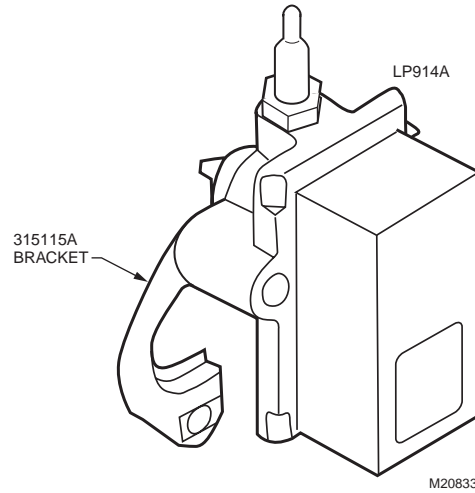


Fig. 5. Bracket for well-mounted LP914A.

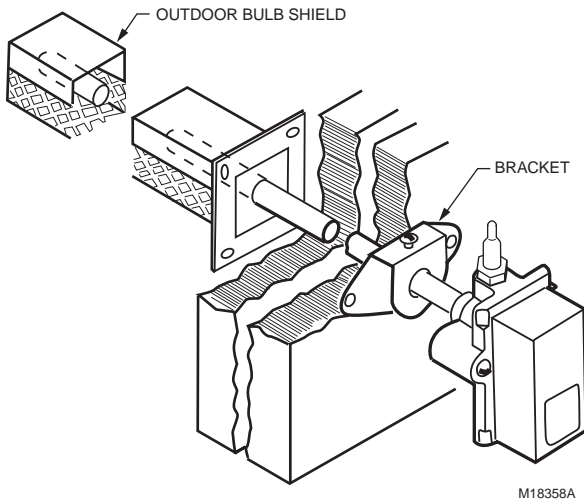


Fig. 4. Outdoor bulb shield and bracket for through-the-wall-mounted LP914A.

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