Residential Technical Services: YS Letter

Letter: YSR-004-25

Date: December 1, 2025 Expires: June 1, 2026

To: S1 HVAC Branch and Distributor Principal, Sales Manager, Service Manager, Parts Manager, Warranty Manager, Training Manager, Delegated Administrator. Technical Services, Parts/S1, ES Americas, ADTI Channel, Account Representatives, Marketing, Sales, Warranty teams

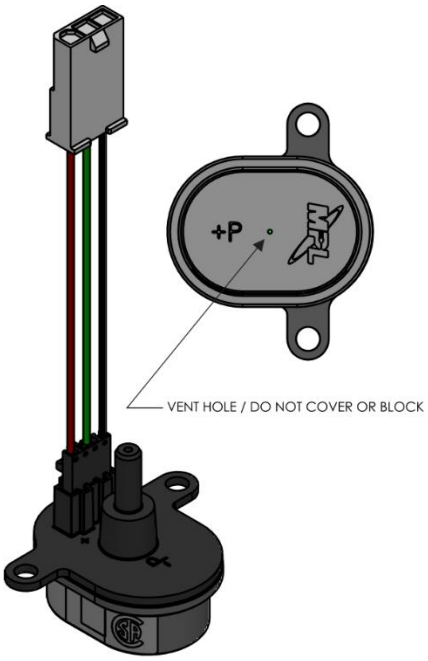
Subject: **Modulating gas furnace pressure transducer (531536 / S1-02435922000)**

Product/s: YP9C, TP9C, LP9C, CP9C (serial number range: **W2G3 through W2K5)**

Summary: This letter provides details regarding pressure transducer failure, and a labor allowance for part replacement.

Dear valued customer,

During the last heating season, we received an increased number of reports regarding pressure sensor related faults (fault code 2, 3, and 6) that were caused by inaccurate voltage from the pressure transducer into the furnace control - out of calibration transducers.



During our investigation, it was discovered that the pressure transducer utilized in the above-mentioned furnace models was changed by the supplier that resulted in a quality concern and escape to the field. **NOT ALL parts are defective. There is a higher than normal failure rate.** A larger hose connection was added. To accommodate this, a slightly larger hose was added to the product. This part is also used in another product line besides the modulating furnace. Another change was made to the plastic body of the part near the hose connection. A very small bleed hole was added. The purpose of the bleed hole is to allow any moisture that may be in the hose to drain out in lieu of damaging the transducer. The transducer works the same way regardless of the bleed hole. There was no change in the part number. **All** approved ducted systems single port pressure transducers have the vent hole on the back side (opposite of hose connection) of the transducer. The purpose of the vent hole is so the transducer can reference atmospheric pressure. Do not cover or block the vent hole. Do not confuse the vent hole with the bleed hole.

Based on very recently returned pressure transducers from our channel partners, we found parts that were out of calibration. In our testing of failed parts, the furnace will light off and operate until the point that the vent pressure switch should be closed, and then a fault will occur. This is typically 10 to 11 minutes into operation.

The vent pressure switch is a -.67" w.c. switch. With any switch, there is an allowable tolerance. This means that the break point (open point) of the switch could be anywhere from .62" w.c. to .72" w.c. The make point (close point) of the switch is typically .10" w.c. different than the break point. The tolerance only applies to the break point. The make point could be .77" w.c. to .82" w.c. When the modulating furnace is operating at lower firing rates, the vent pressure switch is open by design. As the furnace control increases the firing rate (increases vent pressure), there is a point where the vent pressure switch must be closed. With a transducer severely out of tolerance, it is reporting a vent pressure to the furnace control that is not representative of actual vent pressure in relationship with the closing point of the switch circuit. If the switch does not close within the specified pressure, a fault will occur.

The pressure transducer can be tested by measuring vent pressure with a manometer and measuring the voltage DC output. There is an associated voltage output with actual pressure read. To make the testing process quicker and easier for the technician we would like to use a manometer only and watch the vent pressure at time of "light off." This assumes that the furnace does get to the point of light off (ignitor comes on). If not, traditional testing methods must be followed. Each furnace model has a particular vent pressure that corresponds to its firing rate. The modulating furnace lights at the 70% firing rate. The table to the right shows "light-off" firing rates by model.

33 INCH CONDENSING MODELS			
	FIRING RATE %	VENT PRESSURE INCHES W.C.	VENT PRESSURE VDC
*P9C060B12	70	1.12	2.34
*P9C080B12	70	1.09	2.3
*P9C080C16	70	1.09	2.3
*P9C100C16	70	1.01	2.14
*P9C100C20	70	1.01	2.14
*P9C120D20	70	0.96	2.06

Testing Procedure:

- Tee a manometer in with the pressure transducer. (The manometer must read inches water column)
- Operate the furnace.
- Watch the manometer closely, right at the point where light-off occurs. This is when the gas valve is sent a 24V signal to open the solenoid. An audible click can be heard when the 24V solenoid is powered. Compare the manometer reading right at light off to the 70% firing rate of the model furnace being worked on.
- If the vent pressure reading taken is within + / - .10" w.c. of the light off pressure, the pressure transducer is good and should be left in place. The furnace does allow a wider tolerance, however for reliability purposes we are using the above mentioned tolerance value.

As an example, using a *P9C100C16 furnace, correct light off vent pressure is 1.01" w.c. If at light off the manometer read .83" w.c. the transducer should be condemned and replaced. Once replaced, confirm the replacement part operates properly as described in this testing procedure.

Note:

We did receive from the supplier some transducers that were inadvertently labeled 0531536 in lieu of 531536. They operate the same and can be checked using the same method as indicated above.

Claim Approval Requirements:

This letter is to be used on a fix-on-fail basis only.

The failed pressure transducer must be returned as per the Ducted Systems warranty policy and has been requested by the vendor for part analysis. Distributors must hold all returned pressure transducers. We will contact distributors based on warranty claims and arrange for part return.

- The failed part **must** be returned to the distributor and held per the warranty manual policy to capture credit.
- The returned part **must** be marked with the unit serial number.
- Parts will be returned for inspection at our discretion. If returned parts are not within scope of this letter, warranty claims **will be denied and / or reversed**.
- A copy of the service work order / invoice must be included with the warranty claim.
- This letter may be revised, extended, or ended at any time at our discretion.
- If a warranty claim has already been filed regarding transducer replacement, this letter is not applicable.
- This letter is for new warranty claims only.

Warranty Allotment:

Parts Authorized:
(Qty 1) S1-02435922000 SENSOR, PRESSURE

or

(Qty 1) S1-03109198000 TRANSDUCER, W/HARN,4.75-5.25VDC,0-2 WC
Labor Authorized:
2 hours of labor at the dealers registered rate will be allowed for the repair.

S1-03109198000 TRANSDUCER, W/HARN,4.75-5.25VDC,0-2 WC is the 2 port transducer used in the 40" modulating furnace. Functionality is the same as S1-02435922000 SENSOR, PRESSURE, however it has a (-) negative port and a (+) positive port. When using the 2 port transducer in the 33" modulating furnace, do not connect anything to the (+) positive port. Only connect to the (-) negative port. On more recently built modulating furnaces, the hose size is larger than in the past. It will connect to the 2 port transducer, however, make sure the hose is completely seated and the addition of a small, field supplied nylon cable tie is recommended to secure the hose connection.

Reminder:

Test the transducer per instructions above. **DO NOT** replace parts that are not out of the allowable tolerance. Once part is replaced, test again using the same method to ensure system will operate properly.

If you have any questions regarding this issue, feel free to call Ducted Systems Technical Services at:

1-877-874-7378 to speak with a Technical Service representative or gotempproqa@bosch-hcgroup.com.

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