# J&E Hall International

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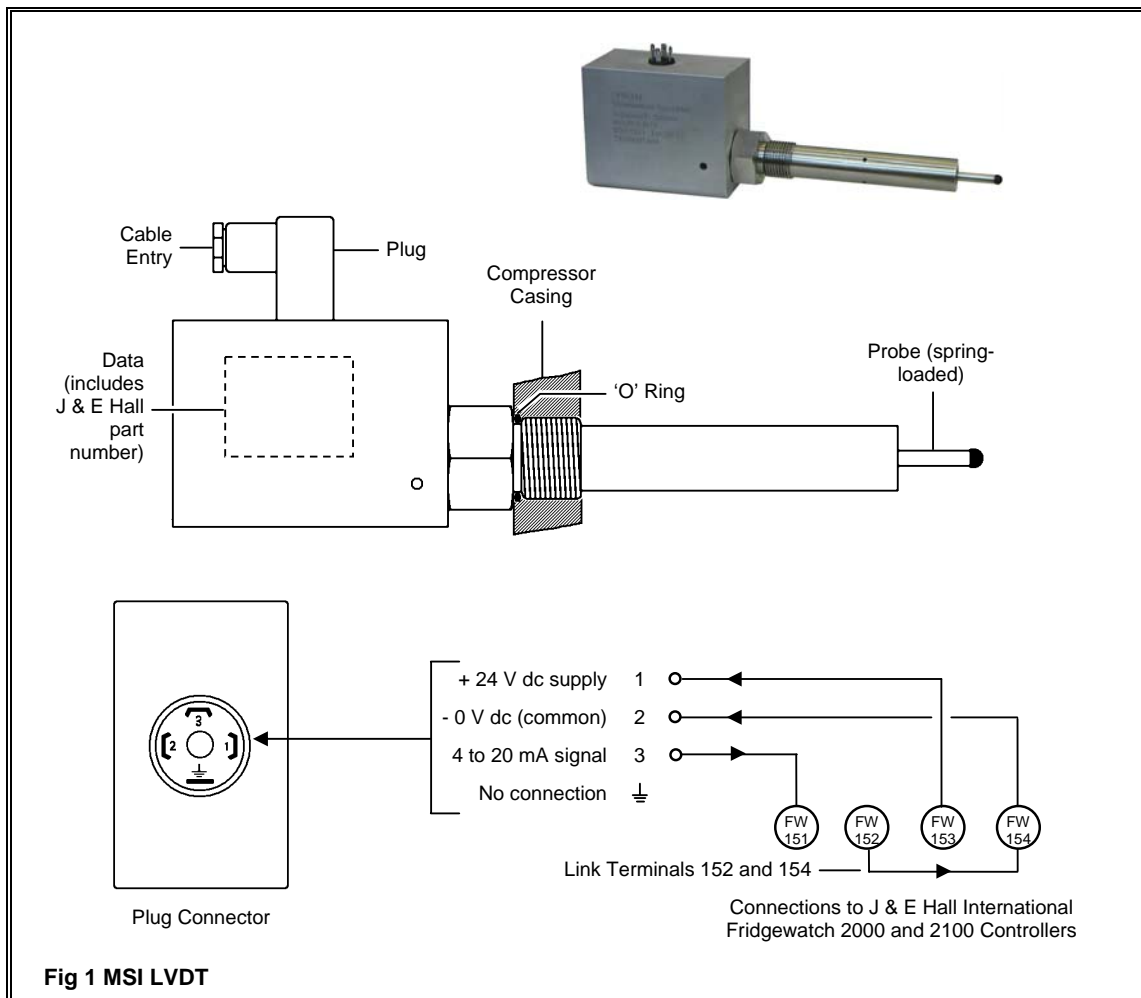
## Information Bulletin

## New MSI LVDT for HallScrew Compressors

From the 1st February 2008, all compressors from the factory in Italy will be supplied with the MSI (Schaevitz) LVDT which replaces the HBLVDT previously fitted.

Points to note:

- The MSI LVDT is a drop-in replacement for the HBLVDT. Adaptors, spacers etc., are not required; refer to Table 1.

- The MSI LVDT is only available without calibration, this must be done on the controller.  However, a signal conditioning module is available, part number 2848-601, for applications where this is not possible.  The module is suitable for DIN rail mounting; refer to Fig 2.
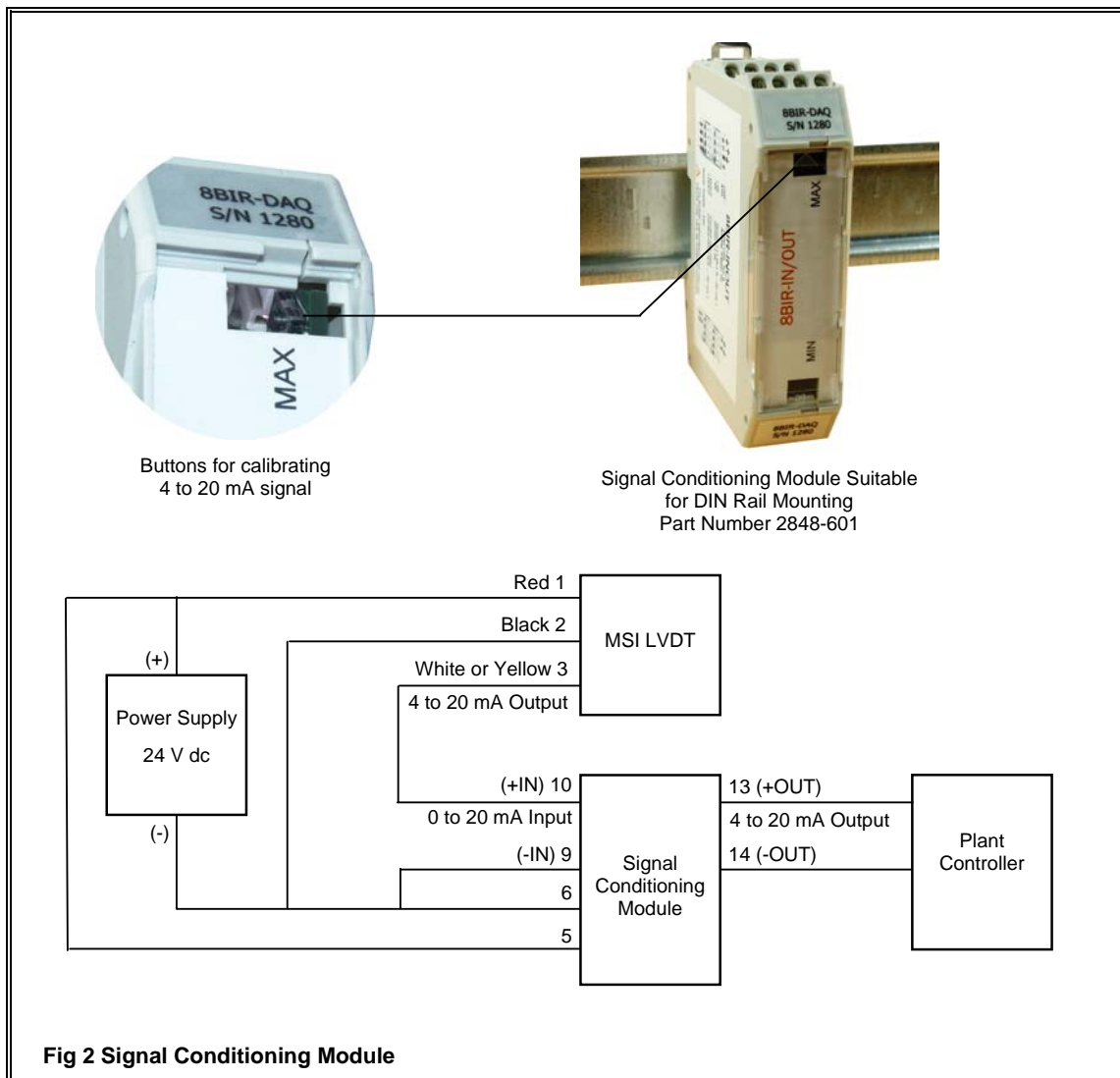
  The method of 4 to 20 mA signal calibration using the signal conditioning module is described on page 3.



Cable Entry — Plug

Compressor Casing

Data (includes J & E Hall part number)

'O' Ring

Probe (spring-loaded)

Plug Connector

| + 24 V dc supply | 1 |
| - 0 V dc (common) | 2 |
| 4 to 20 mA signal | 3 |
| No connection | ⏚ |

FW 151    FW 152    FW 153    FW 154

Link Terminals 152 and 154

Connections to J & E Hall International Fridgewatch 2000 and 2100 Controllers

**Fig 1 MSI LVDT**

| [1]J & E Hall Part Number | | HallScrew Compressor Series | |
|---|---|---|---|
| MSI LVDT | HBLVDT | | |
| 7876-141 | 7876-111 | HS 3100 and HS 3200 | |
| 7876-142 | 7876-112 | HS 4200 | |
| 7876-143 | 7876-120 | HS 2024 | HS 2000 |
| 7876-144 | 7876-121 | HS 2028 | |
| 7876-145 | 7876-122 | HS 2031 | |
| 7876-146 | 7876-123 | HS 2035 | |

[1]The J & E Hall part number appears on the body of the MSI LVDT.

**Table 1 MSI LVDT/HBLVDT Part Number Cross-reference**



Buttons for calibrating
4 to 20 mA signal

Signal Conditioning Module Suitable
for DIN Rail Mounting
Part Number 2848-601



**Fig 2 Signal Conditioning Module**

**4 to 20 mA Calibration Using Signal Conditioning Module**

To use this procedure, sufficient heat load must be available to permit the compressor to run at maximum load long enough for the procedure to be completed.

The MSI LVDT and signal conditioning module must be wired as shown in Fig 2, check this point.

(a)    Start the compressor if it was not already running.  If the compressor will not start, refer to the notes at the end of this procedure.

(b)    Supply power to the MSI LVDT at least 5 minutes before calibration begins.

(c)    Select 'hand capacity control'.  Move the compressor slide valve(s) to the minimum load position.  The slide(s) must remain at minimum load for the duration of step (d).

(d)    Press the MIN calibration button once.

(e)    Check 'hand capacity control' is selected.  Move the compressor slide valve(s) to the maximum load position.  The slide(s) must remain at maximum load for the duration of step (f).

(f)    Press the MAX calibration button once.

(g)    If the compressor was not already running and at operating temperature, wait until steady operating temperature is achieved before repeating the calibration procedure from (c) to (f).

To calibrate the MSI LVDT it is necessary to run the compressor.  If the compressor does not start the calibration may be so far out that the plant controller will flag an analogue input error on the MSI LVDT channel, or the signal may be so far away from 4 mA that the controller does not consider that the compressor is at minimum load.  The compressor should be interlocked to prevent starting unless the slide valve(s) are at minimum load, therefore, either of the above conditions will result in the controller refusing to allow the compressor to start.

To enable the compressor to start under these circumstances and to allow the compressor to continue running during the MSI LVDT calibration procedure, the plant controller must provide a way to temporarily disable the 'minimum load interlock' and the 'MSI LVDT analogue out-of-range error trip'.

## ⚠ CAUTION

**It is essential for safe compressor operation that the minimum load interlock and the MSI LVDT analogue out-of-range error trip are both re-enabled as soon as the calibration of the MSI LVDT is completed.**

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