HW48

Surge protection devices for Honeywell STT350 smart transmitters

NOTE
Adhering to these instructions guarantees maximum performance of this Protection device.

1 Introduction

The HW48 can be installed within the housing of a Honeywell STT350 Smart Transmitter to give protection against surges such as those generated by lightning. The unit mounts against the side of the STT350 and fits inside a Honeywell EP housing. Loop wiring is made to the terminal block on the HW48, with connection to the transmitter being made by the HW48 spade terminals. Other connections are made directly to the Honeywell STT350. The HW48 adds 36ž to the loop resistance and so it might be necessary to increase the voltage of the loop supply to compensate, to allow the transmitter to function correctly.

The HW48 diverts any surge safely away from the STT350 to the housing, which acts as an equipotential point for the transmitter. The transmitter housing should be bonded to the plant earth by as short a length of wire as possible, using wire of at least 4mm2 cross-section.

Used in conjunction with the EP housing, the HW48 does not affect the EEx d / explosionproof certification of the enclosure. In Zone 2 / Div 2 applications, introducing an HW48, when used in the EP housing, will not adversely affect the safety of the system. In intrinsically safe circuits, the HW48 can be classified as non-energy storing apparatus (<1.2V, <0.1A, <20µJ, <25mW, C_{eq} = 0, L_{eq} = 0).

2. Important safety information

WARNING
In hazardous area/location applications where explosive gases may be present the following instructions MUST be followed

EEx d / explosionproof -
In explosionproof / flameproof applications the loop must be isolated before any EEx d / explosionproof covers are removed.

EEx i / intrinsic safety -
In intrinsically safe circuits use only IS certified test equipment.

3. INSTALLATION

Note: This surge protection device (SPD) is designed to limit the voltage that can occur both line-line and line-earth and, therefore, this unit will not pass a 500V insulation test. Any system insulation test should be carried out before the HW48 is installed.

Refer to figure 1 for guidance in installing the HW48, using the following instructions.
{If a Smart Meter or Analog Meter is being used on the transmitter, cut off the link wire from the side of HW48 before installing it on the transmitter (see figure 1). The meter can then be installed onto the transmitter, as shown in figure 2}

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3.1 Remove the cover of the transmitter housing (if applicable). The HW48 fits on the side of the STT350 transmitter adjacent to terminals 5, 6, 7 & 8.

3.2 Remove the retaining screw at the base of the STT350 transmitter on the side of the transmitter by terminals 5, 6, 7 & 8 and loosen the screws on terminals 5, 6 & 8.

3.3 Replace the fixing screw removed in (2), using it to attach the bonding ring to the housing at the same time, this is the surge bond for the HW48. (This operation can be done with the green/yellow bonding wire uncoiled from the HW48). When the screw is tightened, ensure that the ring terminal does not rotate to such an extent that it will interfere with the replacement of the transmitter housing cover.

3.4 Mount the HW48 against the side of the STT350. In doing this, the green/yellow wire must be guided into the channel in the side of the HW48. The transmitter retaining screw head will fit into the recess in the base of the HW48 and the terminals of the HW48 will slide into the STT350 terminals 5, 6 & 8. Before tightening the terminal screws, ensure that the HW48 is pressed tightly against the side of the STT350 and hold it in place whilst tightening the terminals.

3.5 Attach the wires for the 4-20mA loop to the terminals marked + and- on the HW48. If there is a screen, it should be connected to the central terminal on the HW48.

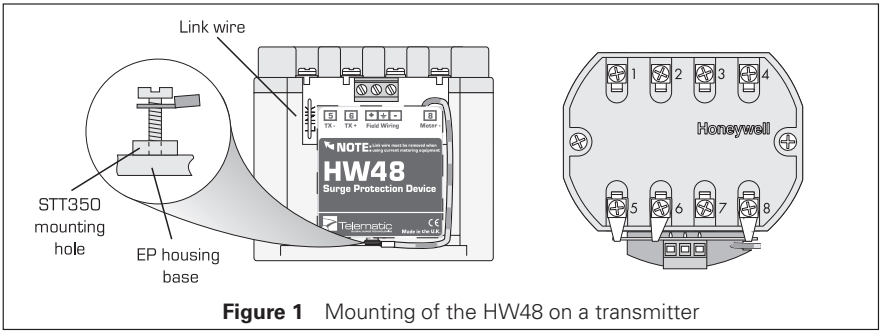

Figure 1 Mounting of the HW48 on a transmitter

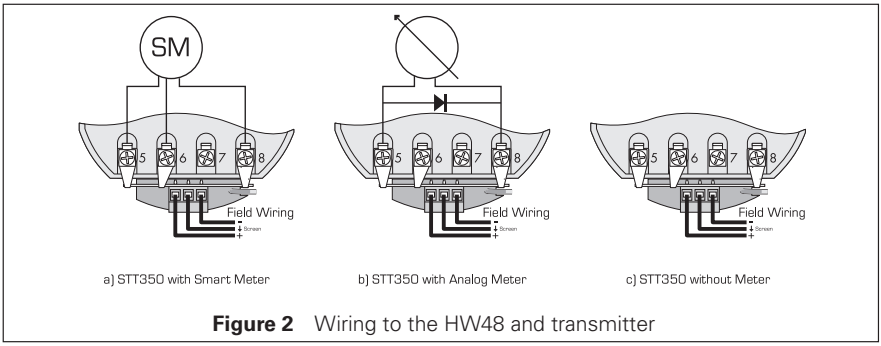

Figure 2 Wiring to the HW48 and transmitter

4.0 MAINTENANCE

The unit is designed to give a long "normal" service life. However, if exposed to a large number of high energy transients beyond the capability of the unit, it may fail. The unit has been designed so that, under excessive surge conditions, it should fail-safe, protecting the transmitter. If the unit has failed, it can be replaced in the field- the process for removal is the reverse of that for installing the unit. If a replacement HW48 is not immediately available, it is possible to bypass the unit by wiring directly to the transmitter; however, it should be remembered that, in this case, the transmitter will be unprotected from surges.

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