

SIGNALINE HEAT

Signaline HD+



Hazardous Area Installation Manual



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Revision 1.1 (2025)

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Overview

Signaline HD+ Linear Heat Detection may be installed in hazardous areas using intrinsically safe barriers.

The controller must be installed in the safe area, and the intrinsically safe (I.S.) barriers separate the safe area and the hazardous area as shown in Figure 1 (page 5).

Signaline HD+ Linear Heat Detection cable and the end-of-line module are declared as a "simple apparatus" in accordance with the definitions of BS EN 60079-11:2012 and BS EN 60079-14:2014, since they do not have their own ignition source and have "well-defined electrical parameters...which [are] compatible with the intrinsic safety of the circuit in which [they are] used."

This is also in accordance with the ATEX Directive 2014/34/EU as discussed in the ATEX 2014/34/EU Guidelines 4th ed.

The correct intrinsically safe barriers must be chosen to meet the requirements detailed in the approval certificates for the specific barrier. This includes, but is not limited to, the Gas Group, Zones, and Load Parameters.

For the Signaline HD+ Linear Heat Detection cable, the important cable parameters are shown in Table 1.

The system can be installed in a manner similar to that shown in Figure 1. Signaline HD+ Non-Sensing leader cable is optional but may be used if the start of the sensor cable zone is some distance from the control unit and intrinsically safe barriers.

Do not use any other type of non-sensing/leader cable as this can affect the correct operation of Signaline HD+ linear heat detector.



Commissioning Instructions

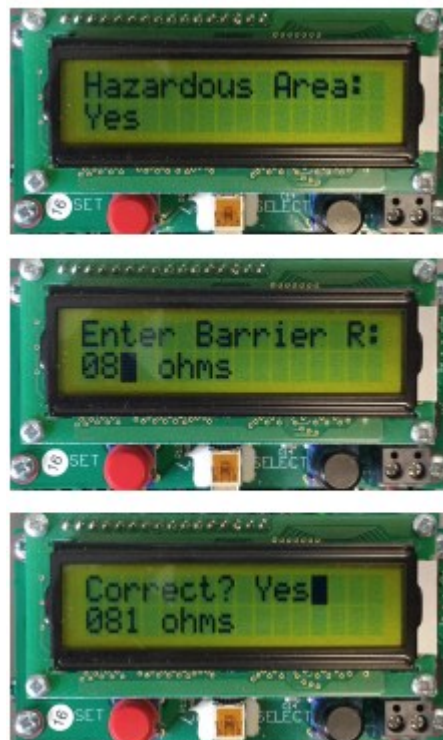
When using the Signaline HD+ LHD system in hazardous areas and with I.S. barriers, it is important to commission the controller correctly so as to remove the offset created by the I.S. barrier resistance.

Refer to the Signaline HD+ LHD installation manual (please see <https://signaline.com/product-categories/signaline-hd-programmable-linear-heat-detection> to download a copy) to commission the controller.

After entering the calibration resistance, select "Yes" for the "Hazardous Area" option. Then enter the IS barrier resistance and confirm this is correct.

The remaining settings can be configured as per the Signaline HD+ LHD installation manual

Note: The hazardous area IS barrier resistance is not saved in the controller and therefore cannot be retrieved by the "Get Current Settings" button. Once the correct value has been entered, it should be recorded for future reference.





Cable Parameters and Maximum Zone Lengths

Table 1: Analogue Cable Parameters

Core Type	Capacitance (pF/m)	Inductance (μH/m)	L/R Ratio (μH/Ω)	Resistance (Ω/m)
White	<65	<12.5	<0.7	~17
Red	<70	<6	<2.5	~3.3
Clear	<105	<3	<14	~0.11

Table 2: I.S. Barrier Maximum Parameters

Barrier Type	Capacitance (μF)	Inductance (mH)	L/R Ratio (μH/Ω)
MTL7728+ / P&F Z 728	0.083 - 2.15	3.05 - 33.6	54 - 435
MTL7728ac / P&F Z 928	0.083 - 2.15	3.05 - 33.6	54 - 435
MTL7722+ / P&F Z 722	0.165 - 4.2	1.45 - 14	44 - 353

Table 3: Maximum Zone Lengths

Gas Group	Max Sensor Cable	With 100m Non-Sensing Cable	With 250m Non-Sensing Cable
IIC	275m (241m P&F)	241m (208m P&F)	191m (158m)
IIB	500m	500m	500m
IIA	500m	500m	500m



Figure 1. Installation Wiring Diagram

