AlarmLine II EN Analogue
Linear Heat Detection System

Hazardous Area Installation Instructions

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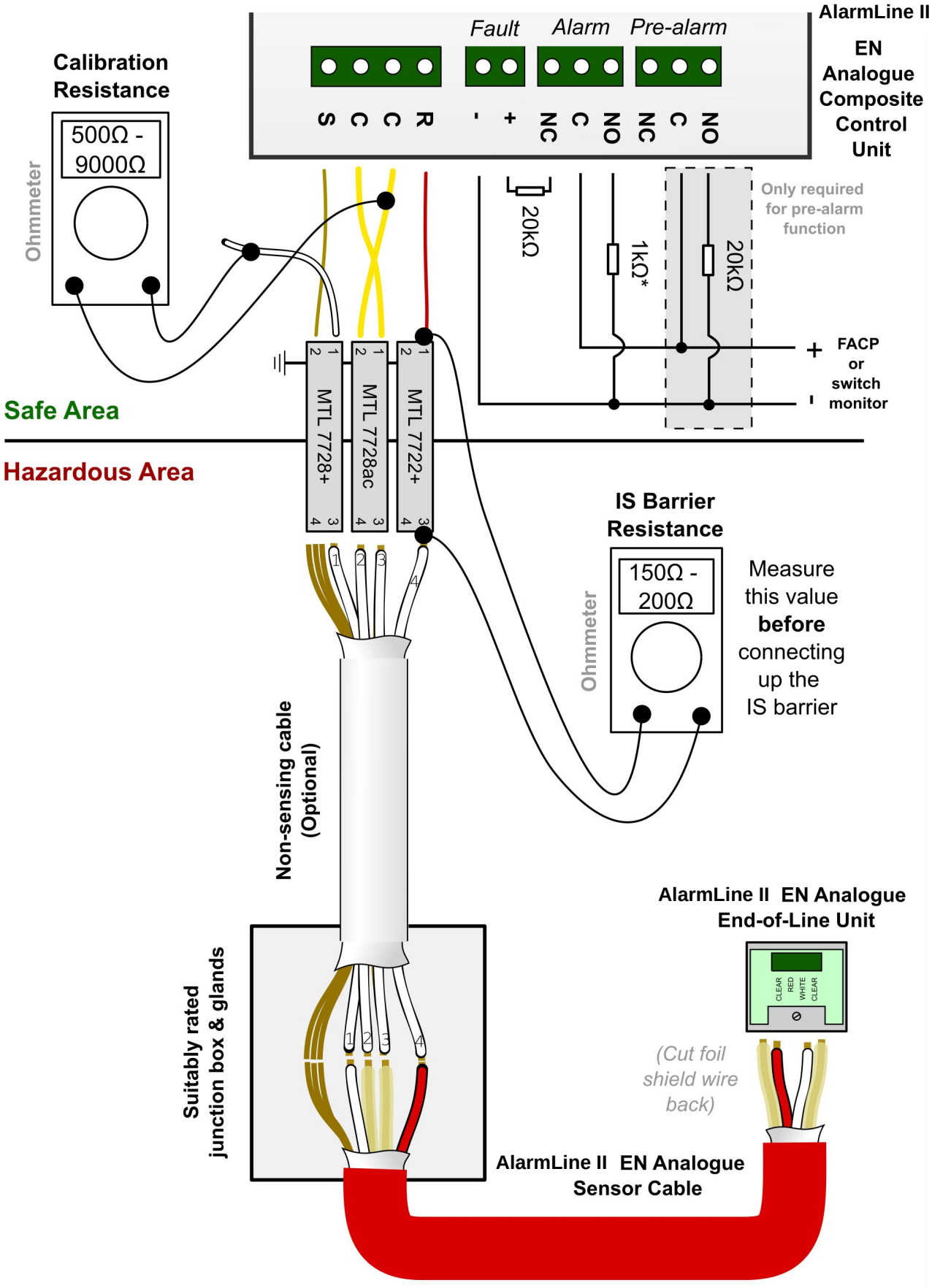
Figure 1. Typical Installation Wiring Diagram



Installation Instructions

AlarmLine II EN Analogue Linear Heat Detection may be installed in hazardous areas using intrinsically safe barriers. The control unit 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.

AlarmLine II EN Analogue Sensor cable and the end-of-line unit are declared as a "simple products" in accordance with the ATEX Directive 94/9/EC section 5.2.1, as neither the cable nor end-of-line module have their own ignition source as detailed in ATEX Directive 94/9/EC section 3.7.2

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

For the AlarmLine II EN Analogue Sensor cable the important parameters relating to hazardous areas are shown in Table 1.

The system can be installed in a manner similar to that shown in figure 1. AlarmLine II EN Analogue Non-Sensing 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 the analogue linear heat detector.

Table 1. Analogue Cable Parameters

Analogue LHD Sensor Cable

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

Analogue Leader (non-sensing) Cable

	Capacitance	Inductance	L/R ratio	Resistance
All Cores	<150pF/m	<2µH/m	<30µH/Ω	~0.035Ω/m

Table 2. I.S. Barrier Maximum Permissible Parameters

MTL7728+ / P&F Z 728

Combined Channels	Group IIC	Group IIB	Group IIA
Capacitance	0.083µF / 0.083µF	0.65µF	2.15µF
Inductance	4.2mH / 3.05mH	12.6mH	33.6mH
L/R ratio	54µH/Ω / 56µH/Ω	218µH/Ω	435µH/Ω

MTL7728ac / P&F Z 928

Combined Channels	Group IIC	Group IIB	Group IIA
Capacitance	0.083µF / 0.083µF	0.65µF	2.15µF
Inductance	4.2mH / 3.05mH	12.6mH	33.6mH
L/R ratio	54µH/Ω / 56µH/Ω	218µH/Ω	435µH/Ω

MTL7722+ / P&F Z 722

Combined Channels	Group IIC	Group IIB	Group IIA
Capacitance	0.165µF / 0.17µF	1.14µF	4.2µF
Inductance	1.65mH / 1.45mH	7.22mH	14mH
L/R ratio	44µH/Ω / 45µH/Ω	176µH/Ω	353µH/Ω

(MTL according to Certificate No. BAS01ATEX7217 Issue 8)

Table 3. Maximum Permissible Zone Lengths

In the case Gas Group IIC applications, the limiting factor on zone lengths is due to the red core inductance. In the case of Gas Group IIB and IIA applications the limiting factor on zone lengths is the maximum allowed sensor cable per controller.

Gas Group	only Analogue Sensor Cable	with 100m non-sensing cable	with 250m non-sensing cable
IIC	275m (241m P&F)	241m (208 P&F)	191m (158m)
IIB	500m	500m	500m
IIA	500m	500m	500m

Commissioning Instructions

When using the AlarmLine II EN Analogue 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 AlarmLine II EN Analogue Linear Heat Detection System Installation Instructions document to commission the controller, however, in the laptop/PC software before clicking "Update Settings", the "Hazardous Area" checkbox should be ticked. The resistance value of the I.S. barrier in line with the Red core of the sensor cable (see figure 1), should be entered in the box labelled "IS Barrier Resistance". Once this has been done, the "Update Settings" button can be clicked.

Likewise, if the AlarmLine II EN Analogue is being programmed using the built-in display, 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 AlarmLine EN Analogue Linear Heat Detection System Installation Instructions.

See the images on the right for examples using the laptop/pc software and when using the built-in LCD screen.

Note: Once the hazardous area I.S barrier resistance has been measured and entered into the control unit, it should also be recorded for future reference.