

# SIGNALINE HEAT LocatorPlus



## Hazardous Area Product Guide



Tel: +44(0)1252 725257

Revision 1 (2020)

© 2020/21 LGM Products Ltd.

Email: [sales@lgmproducts.com](mailto:sales@lgmproducts.com)

Web: [www.lgmproducts.com](http://www.lgmproducts.com)

ISO 9001:2015 certified

Address: LGM Products Ltd, Unit 15 Riverside Industrial Park, Farnham, Surrey, GU9 7UG, United Kingdom.



# Contents

**Typical Instillation Wiring Diagram**

**Installation Instructions**

**Table 1. Signaline FT cable parameters**

**Table 2. I.S. Barrier Maximum Permissible Parameters**

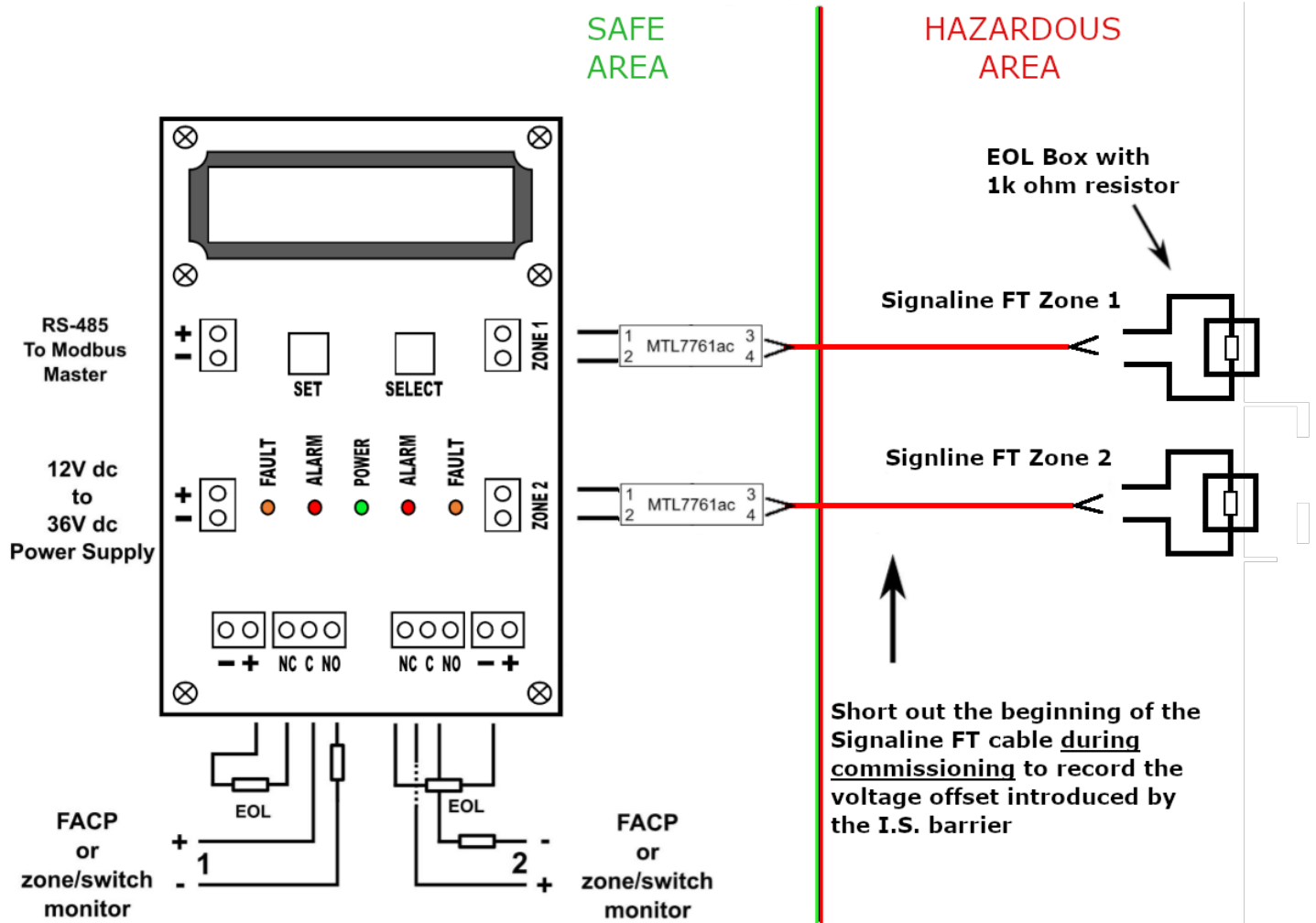
**Table 3. Maximum Permissible Zone Lengths**

**Commissioning Instructions**

*Please read this instruction leaflet thoroughly before commencing installation.*



Figure 1. Typical Installation Wiring Diagram





## Installation Instructions

The Signaline LocatorPlus can be used with Signaline FT Linear Heat Detection cable which is to be installed in hazardous areas, using intrinsically safe barriers. The LocatorPlus must always 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.

Signaline FT cable is declared as “simple apparatus” in accordance with the ATEX Directive 94/9/EC section 5.2.1, as the cable does not have its own ignition source as detailed in ATEX Directive 94/9/EC section 3.7.2. The end-of-line device is also “simple apparatus” in accordance with the ATEX Directive 94/9/EC section 5.2.1.

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. Important cable parameters for Signaline FT are shown in Table 1.

The system can be installed as shown in figure 1. Interposing (otherwise known as leader cable or non-sensing cable) maybe used between the intrinsically safe barriers and start of the Signaline FT sensor cable. However, the inductance, capacitance and L/R ratio must be calculated as it may affect the maximum permissible zone length according to table 3. Otherwise, if no interposing cable is used the maximum permissible zone lengths are detailed in table 3.

Please note, when using intrinsically safe barriers the maximum length of Signaline FT cable per zone is reduced to 2250m (7380ft).

To maintain accurate distance locating, the voltage offset introduced by the I.S. barrier needs to be recorded by the LocatorPlus. Refer to the Commissioning Instructions on page 5.



**Table 1. Signaline FT Cable Parameters**

Product	Rating	Capacitance	Inductance	L/R Ratio	Loop Resistance
FT-68 / FT-68-R	68°C (155°F)	<120pF/m	<1.60μH/m	<17.7μH/m	~181Ω/km
FT-88 / FT-88-R	88°C (190°F)	<85pF/m	<1.72μH/m	<19.3μH/m	~179Ω/km
FT-105 / FT-105-R	105°C (221 °F)	<73pF/m	<1.65μH/m	<18.2μH/m	~182Ω/km
FT-185 / FT-185-R	185°C (365°F)	<190pF/m	<1.62μH/m	<17.9μH/m	~182Ω/km

**Table 2. I.S. Barrier Maximum Permissible Parameters**

MTL7761ac / P&F Z 961

Combined Channels	Group IIC	Group IIB	Group IIA
Capacitance	4.9μF / 4.9μF	40μF	500μF
Inductance	3.72mH / 4.69mH	1.5mH	31 mH
L/R ratio	158μH/Ω / 182μH/Ω	632μH/Ω	1264μH/Ω

(MTL according to Certificate No. BAS01 ATEX721 7 Issue 8)

**Table 3. Maximum Possible Zone Lengths**

In the case of Gas Group IIC applications, the limiting factor on zone lengths is due to the inductance of the Digital Fixed Temperature LHD Cable. In the case of Gas Group IIB and IIA applications, the limiting factor on zone lengths is the maximum allowed sensor cable per zone on the LocatorPlus when using an I.S. barrier.

Product	Gas Group	IIC	IIB	IIA
Signaline FT-68 / FT-68-R	68°C (155°F)	2250m	2250m	2250m
Signaline FT-88 / FT-88-R	88°C (190°F)	2162m / (2250m P&F)	2250m	2250m
Signaline FT-105 / FT-105-R	105°C (221 °F)	2250m	2250m	2250m
Signaline FT-185 / FT-185-R	185°C (365°F)	2250m	2250m	2250m



## Commissioning Instructions

The Signaline LocatorPlus should be commissioned in the normal manner (refer to the Signaline LocatorPlus Installation Instructions for more detail). However, to maintain accurate distance locating, the voltage offset introduced by the I.S. barriers, and any lead cable need to be recorded by the LocatorPlus.

In order to carry out this procedure, during commissioning the LocatorPlus will display "Zone 1 LdrCable" or "Zone 2 LdrCable". At this point it is important to select "Yes". The screen should then show "Ready to calibrate".

**Before pressing select, the two cores at the beginning of the Signaline FT should be securely shorted out. Then press the 'SET' button.**

The screen will show "Zone 1 Cal:" or "Zone 2 Cal:" and the voltage drop respectively. Check to make sure that the displayed value is approximately correct. This can be verified by disconnecting the cables into the corresponding zone on the LocatorPlus and with the cables shorted at the beginning of the Signaline FT, measure the resistance at the LocatorPlus. The calculated voltage drop should equal approximately half the measured resistance.

If the voltage drop has been calculated correctly, the short at the beginning of the Signaline LocatorPlus be removed and the commissioning of the LocatorPlus unit completed.

