

SIGNALINE HEAT

LocatorPlus-EN



Instrukcja montażu



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Revision 2 (2023)

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PAMIĘTAJ

Podłącz Signaline LocatorPlus-EN zgodnie odpowiednimi przepisami i wytycznymi.

► The Signaline LocatorPlus-EN must be installed in accordance with BS 5839-1:2017 (or country equivalent) and IEC 60364 and authorities having jurisdiction.

Instalacja, przeglądy i konserwacja systemu może być zlecona wyłącznie przeszkolonym instalatorom.

Do Signaline LocatorPlus-EN podłączaj wyłącznie kable Signaline FT-EN Linear Heat Detection.

Przed podłączeniem sprawdź kabel Signaline FT-EN Linear Heat Detection przy pomocy multimetru.

Rezystor końca linii FT-EOL-EN musi być na końcu każdego kabla Signaline FT-EN.

W przypadku wykorzystania tylko jednej strefy pozostaw rezystor w zaciskach niewykorzystanej strefy

⇒ Ensure any cable glands used are tightened to form a secure and moisture proof seal around the Signaline FT-EN Linear Heat Detection cable and any other cable in or out of the unit.

Nie wolno przekraczać maksymalnego napięcia pracy Signaline LocatorPlus-EN - 36 V DC

Nie podłączaj kabla Signaline FT-EN w rozgałęzieniach 'T' lub odnogach.

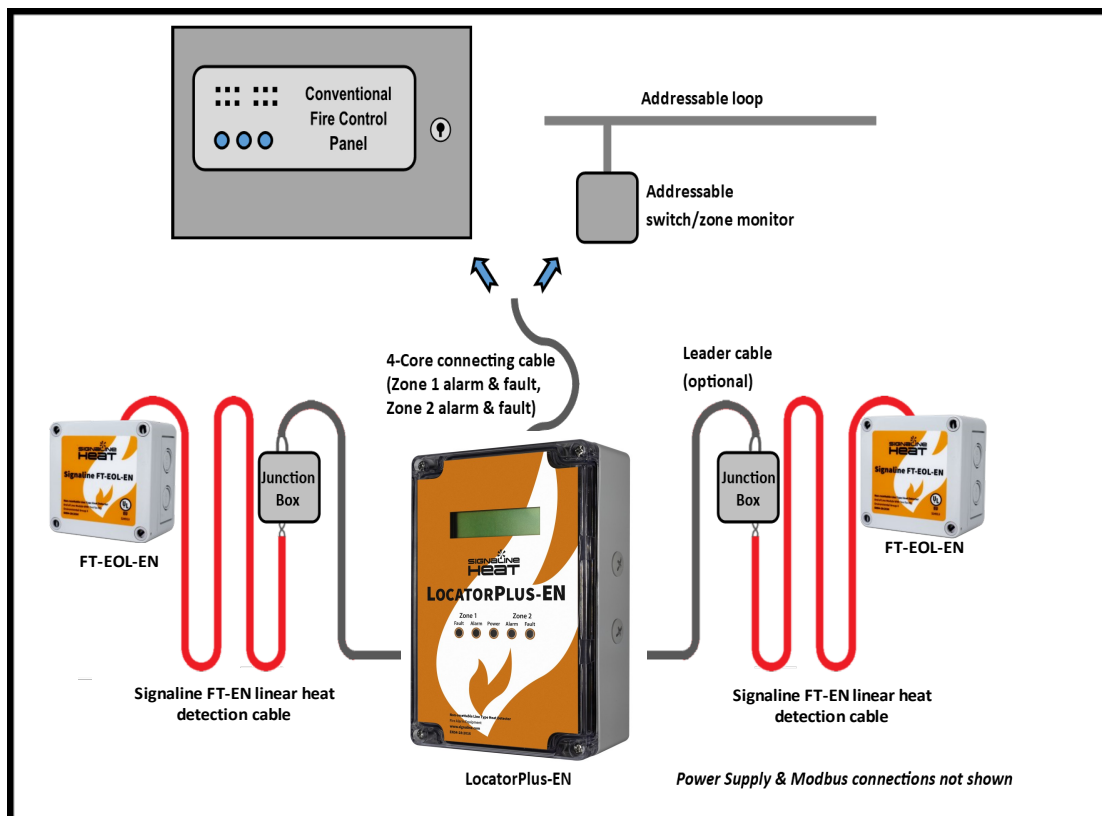


Signaline LocatorPlus-EN przegląd

The Signaline LocatorPlus-EN is a dual zone module for monitoring up to two zones of Signaline FT-EN linear heat detector cable. If an overheat/fire situation triggers either zone of the cable, this unit automatically calculates and displays the distance along the cable, in feet and metres, to the alarm point.

The two zones can operate independently of each other, or in interlock mode and a separate alarm and normally conducting fault output are provided for each zone. The unit is intended to be installed between the Signaline FT-EN Linear Heat Detection cable and a conventional or addressable fire alarm control panel.

It has power, fault and alarm lights, as well as volt free outputs for fault and alarm, corresponding to each zone. It may also be connected to a industrial process control system using the two wire RS-485 Modbus RTU/ASCII output.



Rys 1. Typowa konfiguracja systemu



Specyfikacja

Model	Signaline LocatorPlus-EN
Dopuszczenia	EN54-28:2016, UL File no.: S24913
Wymiary	180 x 120 x 60,5 mm
Stopień ochrony	NEMA 4, 4X (IP65)
Wykonanie	Jasnoszara obudowa z przezroczystą pokrywą, pomarańczowy front.
Wyświetlacz	2 linie, 16 znaków, podświetlenie, status strefy
Power requirements	All circuits power limited if powered from a power limited supply
Napięcie pracy	12 V DC (min.) / 24 V DC (nominalne) / 36 V DC (max.)
Prąd spoczynkowy	<15mA (min.) / <7mA (nominalny) / <5mA (max.)
Prąd alarmu	<40mA (min.) / <23mA (nominalny) / <15mA (max.)
Zakres temperatur	-20°C do +50°C (-4°F do +122°F)
Zaciski łączeniowe	5 mm
Obciążalność	16A
Przekrój przewodu	0,08mm ² do 4mm ²
Obwody monitorowane	Zasilanie, Wejścia stref 1 i 2
Wejścia	2 strefy - kable Signaline FT-EN Linear Heat Detection
Długość strefy	1 m - 1000 m
Rezystor EOL	3,6kohm (w komplecie)
Prąd zwarciov	0,5mA
Max napięcie strefy	5V
WYJŚCIA	
Komunikacja	2 żyły RS-485 Modbus RTU/ASCII
Sygnalizator	2,4kHz 92dBa @ 10cm Buzzer
Alarm	2 przekaźniki bezpotencjałowe NO/NC
	Max napięcie 30 V AC lub 42,4 V DC
	Max prąd 2A
	Max moc przełączania 60 W, 62,5 VA
Uszkodzenie	2 fototranzystory
	Max napięcie 35 V DC
	Max prąd 80mA
	Max moc rozpraszania 150mW



Podłączenie

The Signaline LocatorPlus-EN allows accurate location of an alarm point along a length of Signaline FT-EN Linear Heat Detection cable. It continuously monitors up to two zones of Signaline FT-EN Linear Heat Detection cable for a fault (open circuit) or an alarm (overheat or fire condition). Due to the wide range of applications that Signaline FT-EN Linear Heat Detection cable can be used for, it may not always be possible, or be too time consuming, to locate where along the cable where an alarm has occurred. Using the Signaline LocatorPlus-EN, when an alarm occurs, the distance to the overheat condition is immediately calculated and displayed on the integrated display.

If a fault is detected, the corresponding fault output stops conducting, triggering a fault at the fire alarm control panel. If an alarm is detected, the corresponding alarm output changes state, triggering an alarm at the fire alarm panel. The fault outputs also stop conducting on power loss to the unit or microprocessor fault, triggering a fault at the fire alarm control panel.

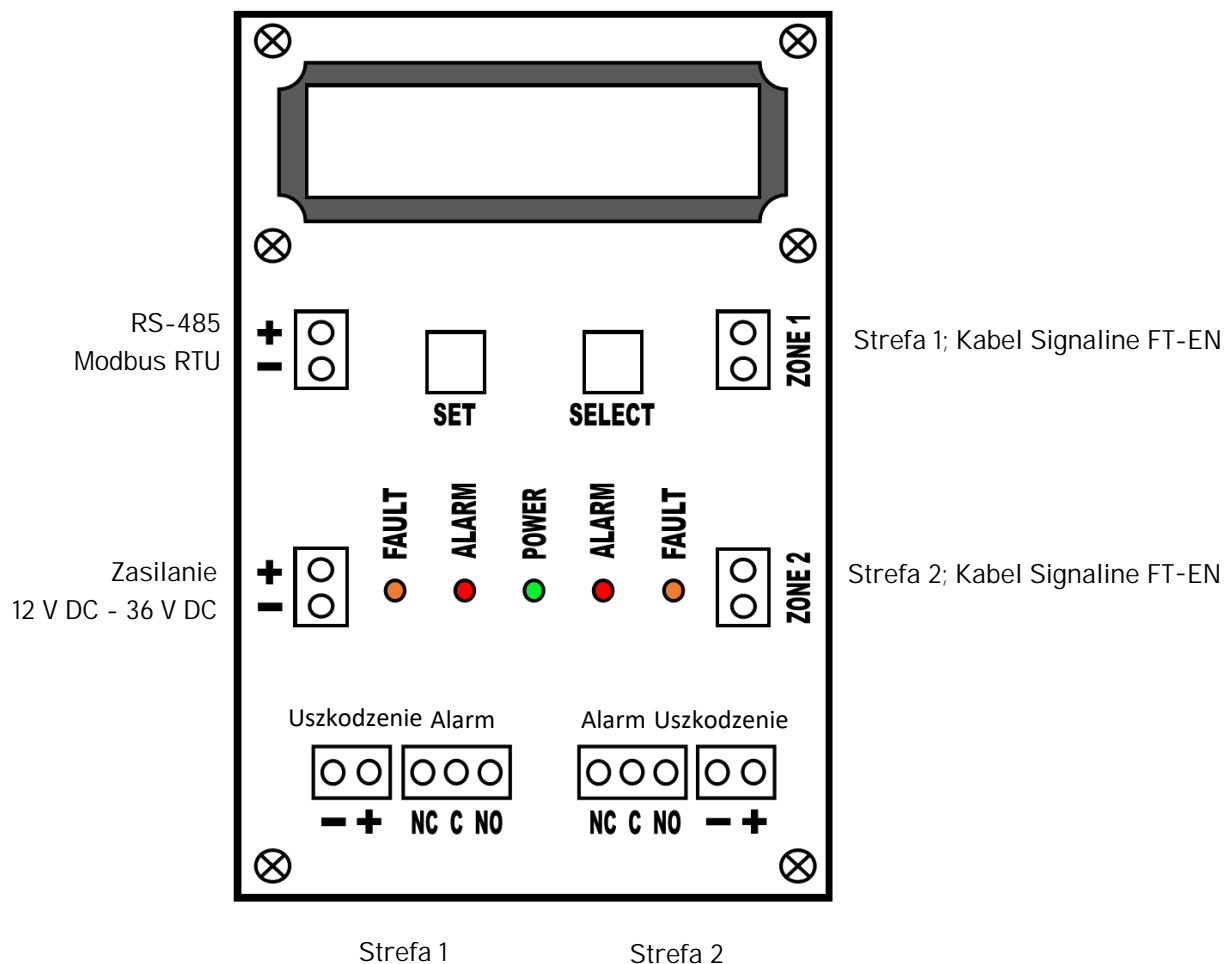
The two wire RS-485 Modbus RTU/ASCII output also outputs the current state of both zones. See the section “Two-wire RS-485 Modbus RTU/ASCII Communications” for more detail.

There are two primary configurations of the Signaline LocatorPlus-EN (see Fig. 1):

- 1) The Signaline FT-EN Linear Heat Detection cable can be connected directly to the Signaline LocatorPlus-EN
- 2) The Signaline FT-EN Linear Heat Detection cable is connected to a length of leader cable which is connected to the Signaline LocatorPlus-EN. (In this scenario the leader cable must be “calibrated out” during commissioning of the Signaline LocatorPlus-EN)



Podłączanie



Rys 2. Podłączanie Lokalizatora Signaline LocatorPlus-EN

Moduł w komplecie posiada rezystory parametryzujące 3,6kOhm dla każdej strefy. Przy wykorzystaniu tylko jednej strefy należy pozostawić rezystor w zaciskach strefy niewykorzystanej. W innym przypadku należy umieścić rezystor na końcu kabla.



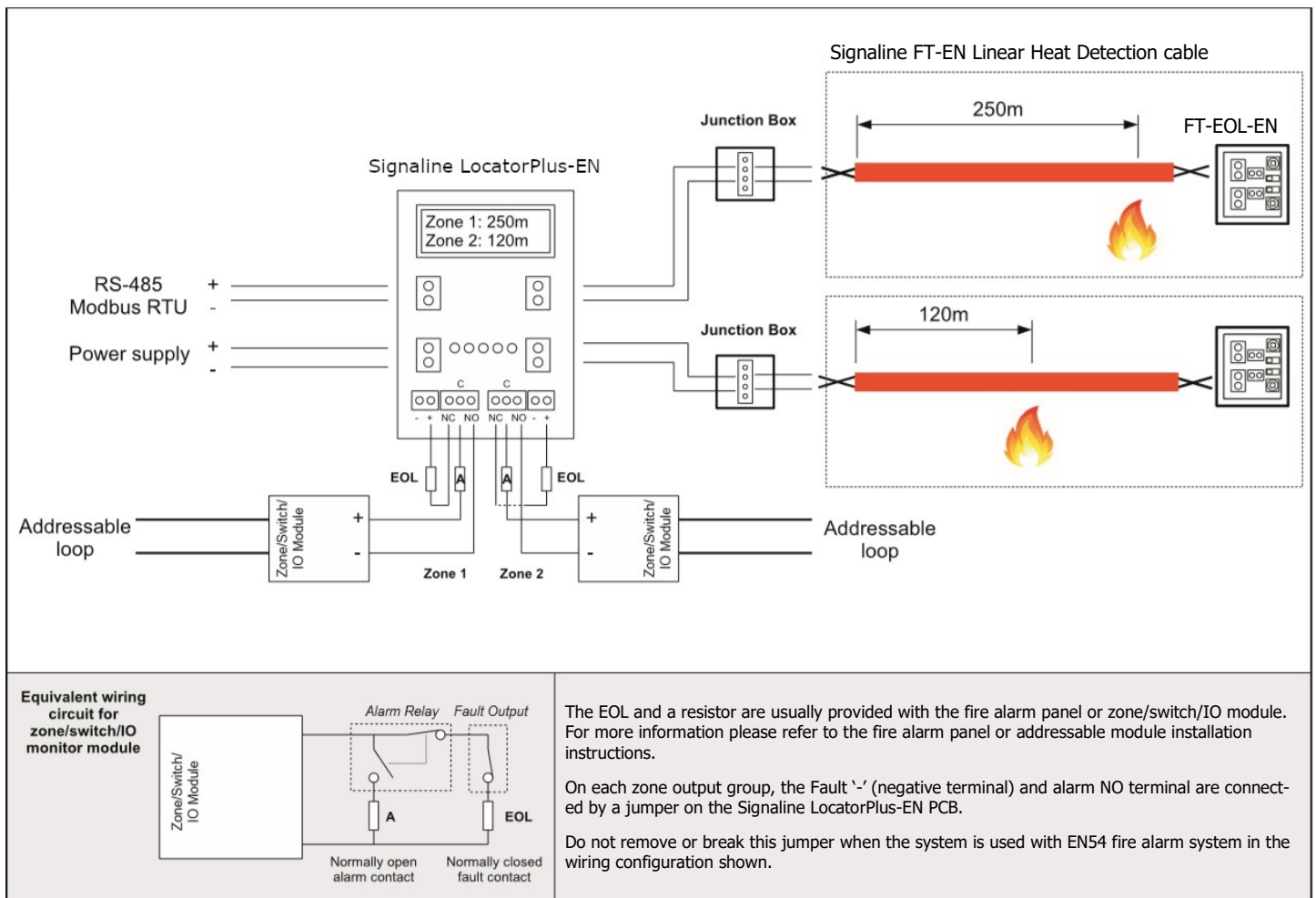
Tryby pracy

There are two operating modes for the Signaline LocatorPlus-EN może pracować w dwóch trybach:

1. Niezależnym (see Fig. 3) – This is when the Signaline LocatorPlus-EN is used as a two zone system. When a fault or overheat condition occurs on a zone of Signaline FT-EN Linear Heat Detection cable, the corresponding fault or alarm output respectively is triggered. The two zones operate independently and both sets of outputs should be connected to a fire alarm control panel. If the zone is not required leave the 3.6kohm resistor in the zone input terminals as supplied.

In this mode, the two zones can either contain identical temperature rated Signaline FT-EN Linear Heat Detection cables or two different temperature rated Signaline FT-EN cables, e.g. Signaline FT-78-EN in zone 1 and a Signaline FT-88-EN in zone 2.

Fig. 3. Typical Schematic for independent operating mode

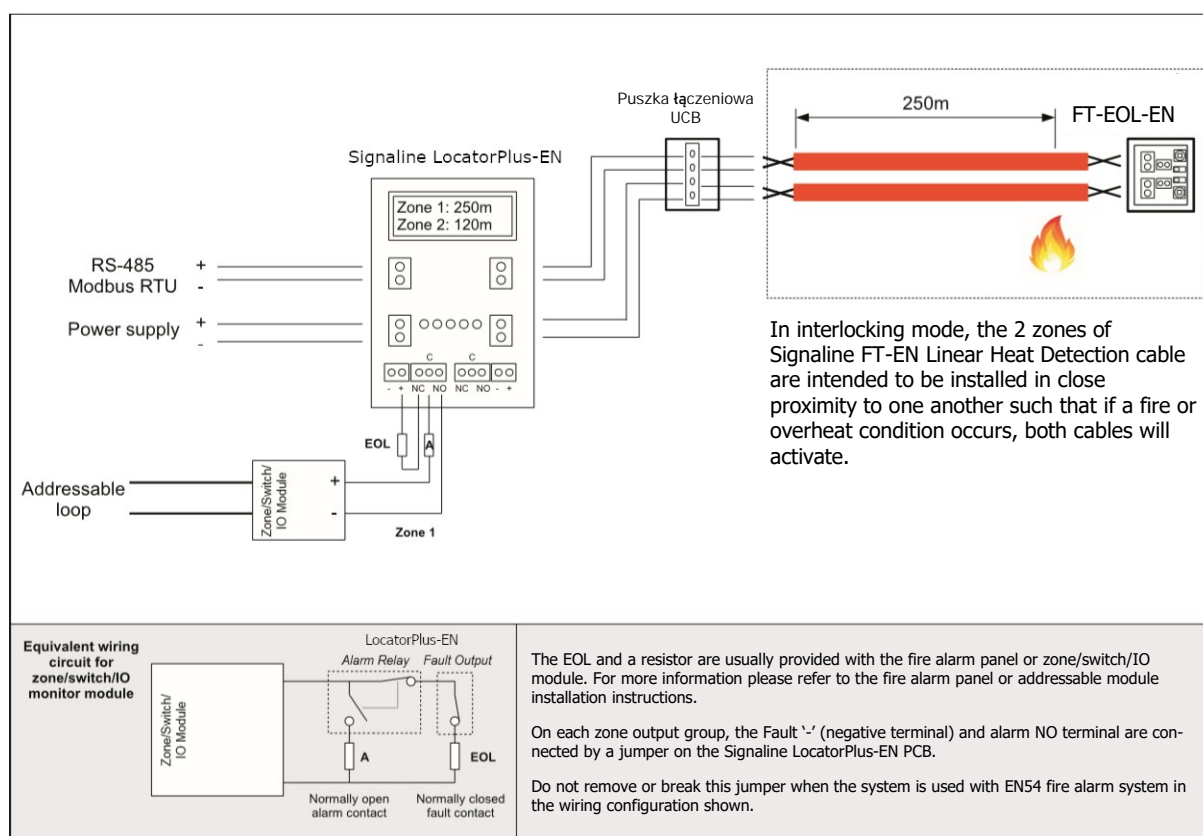




Tryby pracy

2. Zależnym (koincydencji) – this mode is for applications which require a fail-safe guarantee that an alarm is only triggered when an overheat condition has been detected. This mode may also be known as coincidence detection. In this case, the same temperature rated Signaline FT-EN Linear Heat Detection cable should be attached to both zones of the Signaline LocatorPlus-EN. The alarm output is only activated when both zones of Signaline FT-EN Linear Heat Detection cable trigger an alarm due to an overheat condition. If one zone of Signaline FT-EN Linear Heat Detection cable input registers an alarm but the second does not, the alarm output will not be activated. This is to prevent an alarm if a mechanical or other issue has triggered one Signaline FT-EN cable and not an overheat condition.

W przypadku pracy w trybie zależnym należy używać wyjść alarmu i uszkodzenia tylko ze Strefy 1. W każdej strefie musi być wykorzystany ten sam typ kabla Signaline FT-EN, z tą samą klasyfikacją temperatury. Signaline FT-EN Linear Heat Detection cable



Rys. 4. Typowe podłączenie w trybie zależnym



Kabel przeluzajacy

In certain applications it may be desirable or necessary to use non sensing leader cable between the Signaline LocatorPlus-EN and the Signaline FT-EN linear detection cable.

Przykładowo, jeżeli Lokalizator Signaline LocatorPlus-EN jest umiejscowiony w pewnej odległości od chronionego obszaru.

This may be required if the expected ambient temperature range, or other environmental conditions, where the Signaline FT-EN Linear Heat Detection cable is to be used is greater than the maximum ambient temperature range for the Signaline LocatorPlus-EN.

Please refer to steps 8, 9 and 10 w dziale konserwacja the 'Commissioning' section for further details.

The maximum length of leader cable that can be used per zone is dependent upon the leader cable diameter.

The following is a guideline for typical cable sizes and maximum length:

Leader Cable Size	20 AWG (16x0.2mm or 0.8mm dia, copper)
Max Leader Cable Length	1000m



Static Discharge Cautionary

The following items are cautionary notes that will help prevent equipment damage or malfunction caused by static discharge:

CAUTION

Static charges produce voltages high enough to damage electronic components. Follow these precautions when installing, servicing, or operating the Signaline LocatorPlus-EN:

- ⇒ Work in a static-free area.
- ⇒ Discharge any static electricity you may have accumulated.
- ⇒ Discharge static electricity by touching a known, securely grounded object.
- ⇒ Do not handle the printed circuit board (PCB) without proper protection against static discharge.

In the unlikely event that the Signaline LocatorPlus-EN malfunctions after encountering a static discharge correct operation of the unit can be restored by interrupting power to unit for a brief period (approximately 10 seconds).

Setup information can be verified by following the steps in the '**Commissioning**' section.

In the event of the setup information being corrupted the unit should be reset following the '**Resetting the Signaline LocatorPlus-EN**' procedure.



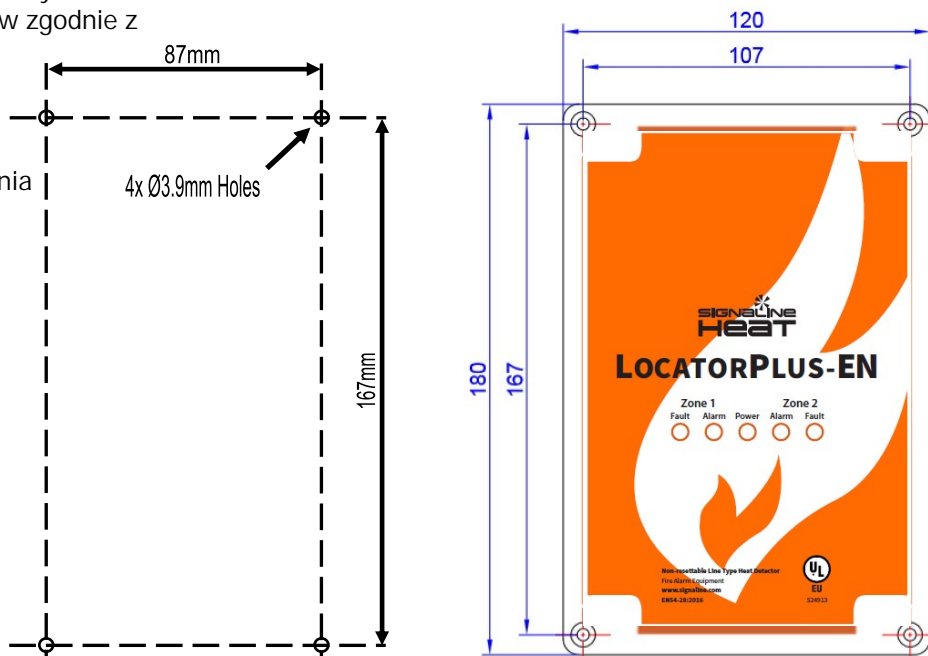
Wymiarowanie

Signaline LocatorPlus-EN jest przeznaczony do montażu ściennego. Wiercenie 4 otworów zgodnie z wymiarami na Rys. 5.

Odpowiadające otwory znajdują się pod pokrywą.

Dobór odpowiednich śrub do zamocowania lokalizatora Signaline LocatorPlus-EN w gestii instalatora.

Maksymalna średnica łba śruby to 7 mm, a gwintu 4 mm.



Rys. 5. Wymiarowanie Signaline LocatorPlus-EN

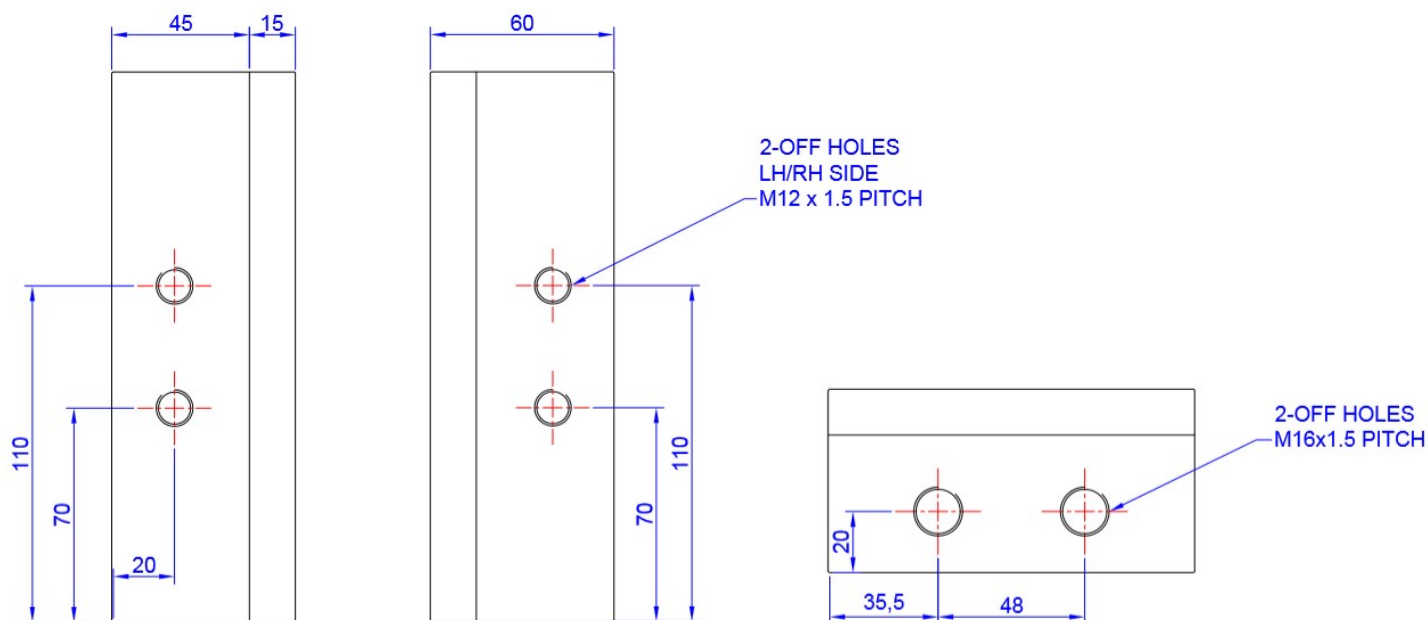


Fig. 6. Mounting specification for Signaline LocatorPlus-EN



Testy

1. Po podłączeniu do okablowania (zgodnie z działem "Podłączanie") włącz zasilanie. Urządzenie pokaże na ekranie wersję oprogramowania.
2. Przy pierwszym uruchomieniu następujące opcje będą dostępne - od pkt. 3. Gdy urządzenie było wcześniej uruchomione na wyświetlaczu pojawią się wcześniej zapisane ustawienia.
3. Po ekranie startowym, kolejny ekran pokaże 3 opcje: Załaduj konfigurację (Load Configs), Nowa konfiguracja (New Configs), Autotest (Self Test). W urządzeniu wcześniej skonfigurowanym, kiedy żaden przycisk nie zostanie naciśnięty, po 10 sek urządzenie przejdzie do ładowania poprzednich konfiguracji.
4. If "Load Configs" is selected or no button has been pressed after 10s on a previously configured device, the screen will show "Loading Saved Configs". The previously saved parameters will then be displayed.
5. Wybierz Tryb Pracy. (patrz dział "Tryby Pracy" po więcej szczegółów). Niezależny (Independent): dwie strefy działają niezależnie (domyślny). Zależny (Interlock): Wyjścia uszkodzenia obu stref są aktywowane gdy uszkodzenia pojawi się w strefie 1 lub 2. Oba wyjścia alarmu zostają aktywowane tylko gdy oba kable Signaline FT-EN Linear Heat Detection wywołają alarm.
6. Wybierz odpowiedni program działania dla Strefy 1 zgodnie z zestawieniem poniżej:
Temperatura aktywacji kabla
68°C Signaline FT-68-EN T068-V10-A045
78°C Signaline FT-78-EN T078-V10-A045
88°C Signaline FT-88-EN T088-V10-A065
7. Wybierz odpowiedni program działania dla Strefy 2 zgodnie z zestawieniem jak w punkcie 6.
8. Jeżeli pomiędzy lokalizatorem a kablem Signaline FT-EN Linear Heat Detection jest kabel przedłużający i/lub kabel przechodzi przez strefę zagrożenia wybuchem i stosowana jest bariera Zennera, należy określić możliwe spadki napięcia żeby zapewnić poprawne działanie i dokładne określenie lokalizacji. With the leader cable and/or IS barriers and the Signaline FT-EN linear heat detector cable connected to the Signaline LocatorPlus-EN zone, short out the connection at the start of the Signaline FT-EN linear heat detector cable. Select "Yes" and press the Set button to continue.
9. If 'Yes' in step 8, the Signaline LocatorPlus-EN will then ask if the zone is ready to be calibrated. The leader cable/IS barrier must be connected to the Signaline LocatorPlus-EN and securely shorted out at the point where it connects to the start of the Signaline FT-EN Linear Heat Detection cable. Once this is done press the Set button.
10. The Signaline LocatorPlus-EN will display the voltage drop across the leader cable. If necessary, press SELECT to calibrate again. The Signaline LocatorPlus-EN unit will display the updated voltage drop in mV (milli-volts). The displayed value should be equal to the approximately the loop resistance in ohms from the Signaline LocatorPlus-EN, with the short in place, divided by eight. Once the voltage drop has been confirmed correct, press SET to continue. Finally, remove the short from the start of the Signaline FT-EN Linear Heat Detection cable.
11. If the Signaline FT-EN Linear Heat Detection cable is connected directly to the Signaline LocatorPlus-EN then select No and press the Set button to continue. See next page for steps 12-27



Commissioning (cont.)

12. Select whether you would like the alarm outputs for both zones to be latching. If set to Yes, then if an alarm is triggered the Signaline LocatorPlus-EN will either require the power supply to be interrupted (min. 2s) or the Set button to be pressed to reset to normal once the alarm conditioned has been cleared.
13. Select whether the Modbus output should be enabled. If this is not enabled then proceed to step 17.
14. Select required Modbus type, either RTU or ASCII
15. Set the Modbus address of this unit. (1 - 247)
16. Cycle through the possible Baud Rates for the Modbus RTU/ASCII output. (2400, 4800, 9600, 19200, 38400, 57600, 115200).
17. Select the number of data bits for the Modbus RTU/ASCII output. (7 or 8)
18. Select the number of stop bits for the Modbus RTU/ASCII output. (1 or 2).
19. Select the parity for the Modbus RTU/ASCII output. (even/odd/none)

Normal Operation

20. Once the unit has been commissioned, the display will show the zone status. In normal operation the display unit in independent mode will show "Zone 1: OK Zone 2: OK".

In Interlock mode the display will show "{Zone 1: OK {Zone 2: OK" to indicate the zones are linked and an alarm is only transmitted if both zones are triggered.

Fault Alarm Conditions

21. If an alarm condition occurs, the Signaline LocatorPlus-EN automatically calculates the distance along the cable to the trigger point and first displays this value in metres.
22. The display alternates showing the distance along the cable to the trigger point in metres and in feet.
23. The unit monitors for relay faults. If an alarm condition occurs but the relay does not switch state (due to a coil failure for example), the device will go into relay fault.
24. The unit monitors for interference faults when the input may be changing between alarm, OK and fault conditions, for example, too rapidly. In this case an I/F FAULT is displayed on the corresponding zone. Check all cable terminations are securely fastened and for other sources of noise.
25. The unit monitors for cable faults (for example open circuit). An open circuit will be displayed as FAULT
26. In interlocking mode, the alarm outputs are only activated when both zones of Signaline FT-EN Linear Heat Detection cables are activated. If one cable activates but not the other the display will show the distance to the alarm on the activated zone and the corresponding alarm LED will flash slowly.
27. In interlock mode, if both Signaline FT-EN Linear Heat Detection cables go into an alarm, the alarm outputs will be activated and the display will show the distance to the alarm for each zone. The zone 1 and zone 2 alarm LEDs will light continuously.



Testing & Verification

1. If self test mode is selected the device will first load the saved configs then proceed to cycle through normal operation, alarm and fault. This is to allow the installer/maintenance engineer verify that the unit is corrected to an external system correctly. The screen will flash "SELF TEST/MODE" every few seconds.
2. In self test mode the device cycles between normal operation, alarm and fault every approx. 8 seconds. In normal operation the display will show ok. The alarm relays will be off and the fault output normally conducting (on).
3. In self test mode and alarm condition the display will show alarm. The alarm relays will be on. After approx. 8 seconds the unit will go into fault condition.
4. In self test mode and fault condition the display will show fault. The fault outputs will stop conducting (off). After approx. 8 seconds the unit will return to normal condition. To exit self test mode, press and hold both SET and SELECT buttons for 10s or more until the device resets.



Two-wire RS-485 Modbus RTU/ASCII Communications

The Signaline LocatorPlus-EN includes a two wire RS-485 Modbus output which can be enabled to output the status of each zone of Signaline FT-EN Linear Heat Detection cable. The Signaline LocatorPlus-EN Modbus output supports the Modbus RTU/ASCII protocol and the following functions:

⇒ Function code 4 (Read Input Registers)

The request for reading the input registers should be constructed in the following manner:

⇒ Address of first register to be read (16-bit)

⇒ Number of registers to read (16-bit)

The Signaline LocatorPlus-EN will respond in the following manner:

⇒ Number of bytes of register values to be read (8-bit)

⇒ Register values (16-bits per register)

The Signaline LocatorPlus-EN stores the information for each zone of the Signaline FT-EN Linear Heat Detection cable in the following format:

Register	Description	Possible Values
0	Zone 1 status	-1 or 65535=fault on zone 0=zone ok 1-32767=distance in metres to trigger point
1	Zone 2 status	-1 or 65535=fault on zone 0=zone ok 1-32767=distance in metres to trigger point
2	Zone 1 cable type	1 = T068-V10-A045 (Signaline FT-68-EN) 2 = T078-V10-A045 (Signaline FT-78-EN) 3 = T088-V10-A065 (Signaline FT-88-EN)
3	Zone 2 cable type	1 = T068-V10-A045 (Signaline FT-68-EN) 2 = T078-V10-A045 (Signaline FT-78-EN) 3 = T088-V10-A065 (Signaline FT-88-EN)

If the start address plus the requested number of registers exceed 4, the Signaline LocatorPlus-EN will return an ILLEGAL DATA ADDRESS error.

If the request contains a function code other than those supported the Signaline LocatorPlus-EN will return an ILLEGAL FUNCTION error.



Resetowanie Lokalizatora Signaline LocationPlus-EN

UWAGA: Ta procedura usunie WSZYSTKIE zapisane ustawienia i przywróci Lokalizator Signaline LocatorPlus-EN do ustwień fabrycznych. Typy kabli, kalibracja kabla przedłużającego, działanie wyjść i Modbus będą wymagały konfiguracji od nowa.

To reset the Signaline LocatorPlus-EN unit back to the factory state, when the unit is powered up and in normal operation (see step 20 in the Commissioning procedure), press and hold the SET and SELECT buttons for a minimum of 10 seconds continuously. While the SET and SELECT buttons are held down the power LED will flash quickly to confirm this procedure is about to take place. After approximately 10 seconds, the unit will restart and return to step 1 in the Commissioning procedure. The settings are only erased if the menu option “New Configs” is selected.

The Signaline LocatorPlus-EN is part of the Signaline family of products.
To see our full range please visit www.signaline.com



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