

# 850 Series Marine Detectors

## Who this Leaflet is for

This leaflet is aimed at suitably qualified technicians experienced in the design and specification of fire detection and alarm systems, who have also received training.

## What this Leaflet Covers

This leaflet is for use when designing a fire detection system, or replacing detectors in an existing system. Specifications are provided for determining detector suitability. Information is provided on features that are unique to the series.

## What this Leaflet does not Cover

- This leaflet does not provide the following:
- Information on detection functionality or guidance on detector type choice. This information is provided in the Detectors Product Application & Design Information document.
  - Installation information. This is because the detectors simply dock to detector bases, and installation details are provided in the associated base documentation.

## Introduction

The detectors are for use in an addressable system, where a number of detectors are placed in key areas around the vessel and offshore. For a more detailed introduction, refer to the Product Application & Design Information document. The next few sections include provide information common to all the detector variants in the series.

## Specifications

### Dimensions

- Height: 42 mm, diameter: 108 mm



Fig. 1: Dimensions

### Material

- Plastic: Flame Retardant ABS

### Electrical characteristics

- The detectors are designed for use in an addressable system which uses the MX Digital Protocol.

### Temperature Ranges

The temperature ranges are shown in Table 1.

Detector	Operating Temperature (°C)	Storage Temperature (°C)	Relative Humidity
850H	-25 to +70 short-term to +90	-40 to +80	95 % (non-condensing)
850PC	-10 to +55	-20 to +55	95 % (non-condensing)
851PH	-25 to +70	-40 to +80	95 % (non-condensing)

Table 1: Temperature Ranges

## Isolator characteristics

The isolator characteristics are shown in Table 2.

Parameter	Isolator	
$V_{\min}, V_{\max}, V_{\text{nom}}$	Line voltage range	20V - 40V, 35V nominal
$V_{\text{SO min.}}, V_{\text{SO max}}$	Isolator trip threshold range	18.5V - 19.99V
$V_{\text{SC min.}}, V_{\text{SC max}}$	Isolator recovery threshold	2.9V, 3.5V
$I_{\text{C max}}$	Maximum rated continuous current	1.1A
$I_{\text{L max}}$	Leakage current into short circuit (isolated tripped)	10mA
$I_{\text{S max}}$	Maximum rated switching current	1.1A non-inductive
$Z_{\text{C max}}$	Maximum series impedance	0.5Ω
$Z_{\text{C typ}}$	Typical series impedance	0.25Ω

Table 2: Isolator Characteristics

## Weights

The detector weights are shown in Table 3.

Detector	Weight (Kg)
850H	0.081
850PC	0.094
851PH	0.076

Table 3: Weights

## Colour Options

Coloured detector covers are available to replace the standard white cover.

These may be required for architectural reasons to blend in with decor of the vessel or offshore.

The detector cover is removed from the detector body and replaced by the coloured cover.

Full fitting details are provided in the leaflet shipped with the covers, which also can be downloaded from the Tyco EMEA web site.

Table 4 shows the coloured cover options available and their order numbers. The order numbers are for 10 covers.

## Compatible Bases

The detectors are compatible with the 4B-C Continuity Base.

## Approvals

The detector complies with the following standards:

- Construction Products Regulation (CPR), fulfilling the requirements of:

- EN 54-5:2000 + A1:2002 - Heat Detectors
- EN 54-7:2000 + A1:2002 + A2:2006 - Smoke Detectors
- EN 54-17:2005 - Short-Circuit Isolators
- Marine Equipment Directive (MED)
- CEA 4021 (2003)- MultiSensor Detectors
- VdS 2806 (1999)- Fire Gas Detectors
- Product family standard EN 50130-4 in respect of Conducted Disturbances, Radiated Immunity, Electrostatic Discharge, Fast Transients and Slow High Energy
- EN 61000-6-3 for Emissions
- SIL2 Certified
- Rated to IP44 in accordance with BS EN 60529:1992 + A2:2013

## Ordering Information

The order numbers for the different colour conversion kits and detectors are as shown in Tables 4 and 5.

Colour Conversion Kits	Order Number
Sample set (all 10 colours)	517.050.501
Orange semi-gloss	517.050.502
Yellow gloss	517.050.503
Green matt	517.050.504
Red matt	517.050.505
Brown matt	517.050.506
Blue gloss	517.050.507
Pink gloss	517.050.508
Silver metallic	517.050.509
Gold metallic	517.050.510

Table 4: Colour Conversion Kits Ordering Information


<b>Colour Conversion Kits</b>	<b>Order Number</b>
Black matt	517.050.511


Table 4: Colour Conversion Kits Ordering Information (cont.)

<b>Detector</b>	<b>Order Number</b>
850H	516.850.053
850PC	516.850.054
851PH	516.850.055

Table 5: Detectors Ordering Information

## CPR Information

 0786
Tyco Fire & Security GmbH, Victor von Bruns-Strasse 21, 8212 Neuhausen am Rheinfeld, Switzerland 15 DoP-2015-4110
EN54-5 and EN54-17 Digital addressable detector for use in fire detection and alarm systems in buildings 850H
Essential Characteristics EN54-5 Tolerance to supply voltage: Pass EN54-5 and EN54-17 Nominal activation conditions/Sensitivity, Response delay (response time) and Performance under fire conditions: Pass Operational reliability: Pass Durability of operational reliability and response delay; temperature resistance: Pass Durability of operational reliability; vibration resistance: Pass Durability of operational reliability; humidity resistance: Pass Durability of operational reliability; corrosion resistance: Pass Durability of operational reliability; electrical stability: Pass

 0786
Tyco Fire & Security GmbH, Victor von Bruns-Strasse 21, 8212 Neuhausen am Rheinfeld, Switzerland 15 DoP-2015-4108
EN54-5, EN54-7 and EN54-17 Digital addressable detector for use in fire detection and alarm systems in buildings 851PH
Essential Characteristics EN54-5, EN54-7 and EN54-17 Nominal activation conditions/Sensitivity, Response delay (response time) and Performance under fire conditions: Pass Operational reliability: Pass Tolerance to supply voltage: Pass Durability of operational reliability and response delay; temperature resistance: Pass Durability of operational reliability; vibration resistance: Pass Durability of operational reliability; humidity resistance: Pass Durability of operational reliability; corrosion resistance: Pass Durability of operational reliability; electrical stability: Pass



0786

Tyco Fire & Security GmbH,  
Victor von Bruns-Strasse 21,  
8212 Neuhausen am Rheinfall,  
Switzerland

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DoP-2015-4111

EN54-5, EN54-7 and EN54-17

Digital addressable detector for use in fire detection  
and alarm systems in buildings

850PC

Essential Characteristics

EN54-5, EN54-7 and EN54-17

Nominal activation conditions/Sensitivity, Response  
delay (response time) and Performance under fire con-  
ditions: Pass

Operational reliability: Pass

Tolerance to supply voltage: Pass

Durability of operational reliability and response delay;  
temperature resistance: Pass

Durability of operational reliability; vibration resistance:  
Pass

Durability of operational reliability; humidity resistance:  
Pass

Durability of operational reliability; corrosion resist-  
ance: Pass

Durability of operational reliability; electrical stability:  
Pass

