

[1]

TYPE EXAMINATION CERTIFICATE

[2] Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014

[3] Type Examination Certificate Number: **Presafe 15 ATEX 6705X** **Issue 02**

[4] Product: **KM RIO Cabinet**

[5] Manufacturer: **Kongsberg Maritime AS**

[6] Address: **Kirkegårdsveien 45, Carpus, P.O. box 483,
3601 Kongsberg, Norway.**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] DNV Product Assurance AS certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.

The examination and test results are recorded in confidential reports listed in item 16.



[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0: 2018, EN 60079-7:2015, EN 60079-11:2012 and EN 60079-15: 2010.

Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed under item 17 of this certificate.

[11] This TYPE EXAMINATION CERTIFICATE relates only to the design of the specified equipment and not to specific items of equipment subsequently manufactured

[12] The marking of the product shall include the following:

Marking of RIO cabinet	 II 3 (1) (2) G	Ex eb ec ib nC [ia Ga] [ib Gb] IIC T4 Gc
For IS cabinet:		-20°C ≤ Ta ≤ 45°C
For Non-IS cabinet	 II 3 G	Ex eb ec nC IIC T4 Gc -20°C ≤ Ta ≤ 45°C

Date of issue:
2022-07-14

Asle Kaastad
For DNV Product Assurance AS
The Certificate has been digitally signed.
See www.dnv.com/digitalsignatures for info



[13] **Schedule**

[14] **Type Examination Certificate No:** Presafe 15 ATEX 6705X Issue 02

[15] **Description of Product**

The verification performed for KM RIO (Remote I/O) cabinets consists of several Ex certified parts with in the Ex e enclosure. The system RIO cabinets are constructed in three different ways with Intrinsic safe system, without intrinsic safe system & combined IS and Non-IS system .

IS System:

The system consists of a CPU and power module (CPM), a bus rail and number of I/O modules for different types of signals and they have 4,8 or 16 IS channels depending upon the type . Maximum of 16 I/O modules can be used in a IS cabinet and 10 I/O modules can be used in the combined IS and non IS cabinet. The system consists of a 2 and 4 slot sections which plugs into each other to form respective bus rail. The bus rail provides all electrical connections between CPU and I/O modules.

Non IS system:

Various KM RIO modules are mounted onto a standard 35mm DIN rail, which has 32 channels used for Non-IS signals. Each module is powered 24VDC from a 6,3 Amp distribution, thus maximum power to field instruments is limited to approx. 5 Amps. Power distribution is done by fuse terminals. The fuses are 6.3 x 32 mm mounted in a fuse plug which is inserted into the fuse terminal. The plug has LED indicating blown fuse.

Creepage and clearance distance shall be maintained according to Table 1 of EN 60079-7. Appropriate distance between intrinsically safe and non-intrinsically safe apparatus shall be maintained as required by EN 60079-11.

Type designation

- FS-16Ex
- FS-160Ex
- FS-10/64Ex.

Electrical Data

Type	Input Voltage	Power Consumption
FS-16Ex	2 x 115/230VAC	Max 250 W
FS-160Ex	2 x 115/230VAC	Max 550 W
FS-10/64Ex.	2 x 115/230VAC	Max 400W

Degrees of protection (IP Code)

IP 66 for Cabinets.

Ambient temperature:

-20°C to +45°C

Routine tests

Dielectric strength test according to clause 23.2.1 of EN 60079-15:2010 shall be performed to the relevant parts in the assembly. Relevant test voltage shall be considered accordingly.

[16] **Report No.:** 319979

[17] **Specific Conditions of Use**

1. Ambient temperature range -20°C to +45°C.

[18] **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.



[19] Drawings and documents

Number	Title	Rev.	Date
404729	*User Manual	D	December 2021
FS-10/64 Ex Zone 2			
403900	*General Arrangement	C	03.12.2021
404728	Layout Drawing	A	25.09.2015
403902	Power and Wiring diagram	A	19.06.2015
403904	*Product BOM report – Single level	D	2022-06-28
FS16Ex, Zone 2			
403894	*General Arrangement	C	03.12.2021
404726	Layout Drawing	A	25.09.2015
403896	Power and Wiring diagram	A	19.06.2015
403736	*Product BOM report – Single level	D	2022-06-28
FS-160Ex, Zone 2			
403897	*General Arrangement	B	03.12.2021
404727	Layout Drawing	A	25.09.2015
403899	Power and Wiring diagram	A	19.06.2015
403903	*Product BOM report – Single level	D	2022-06-28
397400	*Labels for KM Zone 2 RIO Cabinets	B	03.12.2021

[20] Certificate History

Issue	Description	Issue date	Report no.
0	Original issue	2015-11-03	D0001963
1	Revised to include additional certified parts which does not affect the type of protection, update to Directive 2014/34/EU.	2016-05-26	D0001963
2	Revised to include additional certified parts which does not affect the type of protection, Update to latest EN 60079-0:2018	2022-07-14	319979

END OF CERTIFICATE