

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Pilot Device**

with type designation(s)

M

Issued to

**ABB AB, Control Products
VÄSTERÅS, Sweden**

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :**

Rated Insulation Voltage:	600 / 690V
Rated voltage/ current:	AC15:120V/8A, 230V/6A, 400V/4A, 690V/2A DC-13: 24V/5A, 125V/1.1A, 250V/0.55A
Degree of protection:	IP66. IP67 & IP69K for MJS only

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.Issued at **Høvik** on **2017-07-12**for **DNV GL**This Certificate is valid until **2022-06-30**.DNV GL local station: **Stockholm**Approval Engineer: **Nicolay Horn****Andreas Kristoffersen
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Name and place of manufacturer

ABB AB, Control Products Västerås Sweden	ABB Xinhui Low Voltage Switchgear Co, Ltd, Xinhui, China	ABB Bulgaria Eood, Rakovski, Bulgaria
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Product description

Type: Pilot devices with type name "M".

Various contact combinations and colours enlisted in the manufacturer's catalogue 1SFC151005C0201 of July 2016.

The Pilot devices may be used together with matched additional equipment enlisted in the catalogue 1SFC151005C0201 of July 2016.

1. Pushbutton

Type MP*

2. Mushroom pushbutton

Type MPM*

3. Double pushbutton

Type MPD*

4. Emergency stop / machine stop

Type MPE*: Twist-, pull- and key release

Type MPM*: Twist- and pull release

5. Selector switch

Type M2SS*: Two position selector switch

Type M3SS*: Three position selector switch

6. Key operated selector switch

Type M2SSK*: Two position key operated selector switch

Type M3SSK*: Three position key operated selector switch

7. Pilot light

Type ML1

8. Toggle switch

MTS1: Two position toggle switch

MTS2: Three position toggle switch. Momentary operator

MTS3: Three position toggle switch. Maintained operator

9. Joystick

Type MJS*

10. Enclosures and assembled stations

Type MEP*

11. Blocks

12. Type MCB*: Contact blocks

13. Type MLB*: Lamp blocks

14. Type MLBL*: LED blocks

15. Type MCBL*: Contact blocks

16. Type MDB*: Diode blocks

Application/Limitation

The Pilot devices may be used together with matched additional equipment enlisted in the catalogue 1SFC151005C0201 of July 2016. The type approval cover only the equipment listed above with applicable accessories as shown in the below listed test reports.

With $U_{imp}=6kV$ the max rated voltage is normally 600V when used in a IT (ship) net. All parts are applicable for use in applications with directly earthed systems with voltage of 400/690V.

Type Approval documentation

Catalogue 1SFC151005C0201 of July 2016 (part Pilot devices Modular range).

CB Test Certificate SE-30015M2	Emergency stops, MPM
CB Test Certificate SE-56109M1	Emergency stops, MPE
CB Test Certificate SE-30016M2	Contact blocks
CB Test Certificate SE-51128	Contact blocks, MCB
CB Test Certificate SE-56370	Contact blocks, MCBL
CB Test Certificate SE-56219	Contact blocks, MLBL
CB Test Certificate SE-30017M1	Pilot Lights
CB Test Certificate SE-59689	Joystick, MJS
Test report 502319	Emergency stops, MPM
Test report 516010-1	Emergency stops, MPM
Test report 803565-1	Emergency stops, MPE
Test report 816397-1	Emergency stops, MPE
Test report 200250-1	Contact blocks, Lamp blocks, Pushbuttons, Selector switches, Pilot lights, Toggle switch, Emergency stops
Test report 409781	Contact blocks, Lamp blocks, Operators, Enclosures
Test report 709966-1	Contact blocks, MCB
Test report 812876-1	Contact blocks, MCBL
Test report 814869-1	Contact blocks, MLBL
Test report 500824	Operators, Enclosures
Test report 915360-1	Joystick, MJS
Test report 913302	Joystick, MJS (IP66 & IP67)
Test report 913302-2	Joystick, MJS (IP69k)

Tests carried out

Type tests in accordance with IEC 60947-5-1(2000-03) or IEC 60947-5-1(2003-11), IEC 60947-5-5(2005-04) for emergency stop, IP tests in accordance with IEC 60529 and DIN 40050 part 9.

Marking of product

Manufacturers name and Type designation.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed at 2, 3.5 year and at renewal.

END OF CERTIFICATE