



Marine & Offshore

Certificate number: 38940/B0 BV

File number: ACE11/323/2

Product code: 4161D

This certificate is not valid when presented without the full attached schedule composed of 7 sections

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

Tyco Electronics Ltd-Crompton Instruments

Witham (Essex) - UNITED KINGDOM

for the type of product

MISCELLANEOUS SWITCHBOARD INSTRUMENTS

Type: M244-21*-S; M244-31*-S; M244-42*-S; M244-13*-S; M244-H*x-S; M24*-01**-S; M24*-05**-S; M244-02E-S

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 14 Aug 2024

For Bureau Veritas Marine & Offshore,

At BV RIJEKA, on 14 Aug 2019,

Slaven Celic



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=3sczvku1bq>

BV Mod. Ad.E 530 June 2017

This certificate consists of 2 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Active or Reactive Power Meters, Power Factor Meters, Meters for DC and AC Voltage/Current comprising the following models:

Type	Description
M244-21*-S, M244-31*-S(*..0,1,C,3,4)	Active or Reactive Power Meter (Scale 90°)
M244-21*-S, M244-31*-S(*..5,6,D,8,9)	Active or Reactive Power Meter (Scale 240°)
M244-42*-S(*..A,0,1,C,3,4)	Power Factor Meter (Scale 90°)
M244-13*-S(*..A,5,6,D,8,9)	Power Factor Meter (Scale 240°)
M24*-01**-*S(*..6,4,3,2/**..A,R,V,S)	Meter for DC Voltage or Current with a moving coil (Scale 90°)
M24*-05**-*S(*..6,4,3,2/**..A,R,V,S,N,C)	Meter for DC Voltage or Current with a moving coil (Scale 240°)
M244-H*x-S(*..W,Xx...G,H,V,J,K)	Energy meter with analog pointer (Scale -90°)
M244-H*x-S(*W,X/x...B,C,U,D,E)	Energy meter with analog pointer (Scale -240°)
M24*-01**-*S(*..6,4,3,2/**..B,W)	Meter for AC current and voltage with a moving coil and a rectifier (Scale 240°)
M244-02E-S	Meter for AC three phases system current with a moving coil, rectifier and switch selector
M24*-05**-*S(*..6,4,3,2/**..B,W)	Meter for AC current and voltage with a moving coil and a rectifier

2. DOCUMENTS AND DRAWINGS:

Iskra d.d.:

Specifications N° GB P 22.431.000, Version 5.00, dated Jul 2018
 Specifications N° GB P 22.016.500, Version 5.00, dated Jun 2018
 Specifications N° GB P 22.018.280, Version 4.00, dated Jun 2018
 Specifications N° GB P 22.016.750, Version 4.00, dated Jun 2018
 Specifications N° GB P 22.018.630, Version 4.00, dated Jun 2018
 Specifications N° GB P 22.018.010, Version 3.00, dated Jun 2018
 Specifications N° GB P 22.430.080, Version 5.00, dated Jun 2018
 Declaration about products, dated 17 Jun 2014.

3. TEST REPORTS:

SIQ:

Environmental Test Reports No. T223-0295/06 and T223-0297/06 dated 2006-11-23.
 EMC / EMI Test Reports T251-0374/06 and T251-0375/06 dated 2007-01-23.

Iskra:

Type test report N°14/2012, dated 10.12.2012, witnessed by BV' Surveyor.
 Type test report N°6/2013, dated 06.05.2013, witnessed by BV' Surveyor.
 Type test report N°6/2014, dated 15.05.2014, witnessed by BV' Surveyor.

4. APPLICATION / LIMITATION:

- 4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.
- 4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
- 4.3 - BUREAU VERITAS Environmental Category, **EC Code: 31.**
- 4.4 - The equipment fulfils the EMC requirements for installation in General power Distribution Zones.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The meters are to be supplied by **Tyco Electronics Ltd-Crompton Instruments** in accordance with the type described in this certificate.
- 5.2 - This type of product is within the category DBV of Bureau Veritas Rule Note NR320.

6. MARKING OF PRODUCT:

- 6.1 - Trade name.
- 6.2 - Date of manufacture and serial number.
- 6.3 - Equipment type or model identification under which it was type-tested

7. OTHERS:

- 7.1 - It is **Tyco Electronics Ltd-Crompton Instruments's** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
- 7.2 - This certificate supersedes the Type Approval Certificate N° 38940/A0 BV issued on 31 Jul 2014 by the Society.

*** END OF CERTIFICATE ***