



Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 15/JAN/2020. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 15/SEP/2019 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Product Name: Meter, Flowmeter

Model Name(s): Meter Mount TCM-xxxx--xx-xxxx-xxxx (Tricor Flowmeter + Transmitter), Remote Mount TCM-xxxx-xx-xxxx-xxxx (Tricor Flowmeter) & TCE80xx-x-xxxx-xx-x x (Tricor Transmitter/Electronics)

Presented to:

KEM KUEPPERS ELEKTROMECHANIK GMBH
LIEBIGSTRASSE 5
Germany

| | |
|------------------------------|--|
| Intended Service: | Fuel Consumption Measurement, Chemical Injection measurement. |
| Description: | Flowmeter, Coriolis Mass Flow measuring System. |
| Tier: | 3 |
| Ratings: | Voltage: 90 V -240 VAC, 24 VDC; Power: 4 Watt; Suitable for Hazardous Area Classification: II 2G Ex d [ia] IIB & IIC T4 Gb; II (2)G [EX ia Gb] IIB & IIC; II 2G Ex ia IIB & IIC T4 Gb; CSA Class 1, Div 1, Groups C & D; |
| Service Restrictions: | Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. |
| Comments: | Duplicate PDA resides with KEM Kueppers - Karlsfeld - Germany. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. Each particular application and installation is to be specifically approved in conjunction with the relevant system, locations and environmental conditions. All electrical equipment intended for installation in hazardous areas are to be certified safe type based on the class of the hazardous area at its location of installation. Certificates in this regard are to be presented to ABS Surveyor for verification on a |

case by case basis. Comments/Restrictions contained on the Certificate of Compliance to be followed.

Notes / Documentation:

Supporting Documentation: Product Brochure, Coriolis Flow Solutions for a Global Marketplace; IECEx Test Report IEC 60079-11 Ed. 5, Explosive Atmospheres - part 11: Equipment Protection by Intrinsic Safety "i", 16 pages, DE/BVS/ExTR12.00xx/00; IECEx Test Report IEC 60079-1 Ed. 5, Electrical Equipment for Explosive Gas Atmospheres Part 1: Flameproof Enclosures "d", 4 pages, DE/BVS/ExTR12.00xx/00; IECEx Test Report IEC 60079-0 Ed. 5, Explosive Atmospheres Part 0: General Requirements, 12 pages, DE/BVS/ExTR12.00xx/00; IECEx Ex Test Report Cover, 14 pages, DE/BVS/ExTR12.00xx/00; IECEx Certificate of Conformity, Cert No: IECEx BVS 12.0098X; EC-Type Examination Certificate BVS 11 ATEX E 033 X; TCM-230K Meter Joints; U-Shaped Meter Joints; Diamond Shaped Meter Joints; Dwg. "140812", Tricor Size and Materials; CSA Project 2534011;

Term of Validity:

This Product Design Assessment (PDA) Certificate 14-HS1223473-PDA-DUP, dated 16/Sep/2014 remains valid until 15/Sep/2019 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules:

Rules for Conditions of Classification, Part 1 - 2014 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following: Steel Vessels 4-8-2/11.5.4, 4-8-3/1.11 Table 2, 4-8-3/13, 4-8-4/27; Steel Vessels Under 90 Meters (295 feet) in Length 4-6-2/15, 4-6-2/15, 4-6-3/11; Offshore Support Vessels (OSV Rules) 4-8-2/11.5.4, 4-8-3/1.11 Table 2, 4-8-3/1, 4-8-4/29; Rules for Conditions of Classification, 2014-Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following: Mobile Offshore Drilling Units 4-3-2/15.9.1 & 3, 4-3-6; Offshore Installations 3-6/5.1;

National Standards:

UL 913

International Standards:

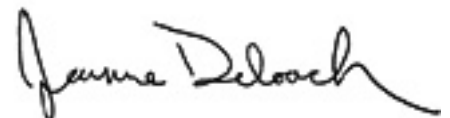
CSA C22.2 No. 30-M1986, 142-M1987, 157-92, 94.1/2-07; IEC 60079-0:2007; IEC 60079-1:2003; IEC 60079-11:2006;

Government Authority:

EUMED:

Others:

| Model Certificate | Model Certificate No | Issue Date | Expiry Date |
|-------------------|----------------------|-------------|-------------|
| PDA-DUP | 14-HS1223473-PDA-DUP | 16/SEP/2014 | 15/SEP/2019 |



ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.