



CERTIFICATE NUMBER

14-HS1223473-PDA

DATE

16 September 2014

ABS TECHNICAL OFFICE

Houston SED - Ship Systems

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of
AW-LAKE COMPANY - FRANKSVILLE

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

PRODUCT: **Meter, Flowmeter**

MODEL: **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)**

This Product Design Assessment (PDA) Certificate 14-HS1223473-PDA, 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.

AMERICAN BUREAU OF SHIPPING


Mohamed C Boukamcha

Engineer

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its customers, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A/3.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

AW-LAKE COMPANY
8809 INDUSTRIAL AVE
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WI 53126
United States
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Email: mversion@aw-lake.com
Web: aw-lake.com

Tier: 2

Product: Meter, Flowmeter

Model: 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)

Intended Service:

Fuel Consumption Measurement, Chemical Injection measurement.

Description:

Flowmeter, Coriolis Mass Flow measuring System.

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 Koppers - 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 / Drawings / 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-12-0000X

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Tier: 2

IECEX Certificate of Conformity, Cert NO: IECEX BVS 12.0098A;
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:

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STANDARDS

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:

UL 913

International:

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:

NA

EUMED:

NA

Others:

NA