



This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate supersedes certificate number 17/20075 (E1) issued on 06.02.2018 which is hereby cancelled.

This certificate is issued to:

DESCRIPTION       Mass flow meters         TYPE       KROHNE       Tokyo Keiso       Comments         designation       designation       Sensor for mass flow with MFC 010: MFS 1000       N/A       /x15, /x25, /x40, /x50 MFS 7000       N/A         MFS 1000       N/A       /x06, /x10, /x15, /x25, /x40, /x50 MFS 7000       N/A       /x06, /x10, /x15, /x25, /x40, /x50 /x80 (x may be S: Stainless, H: Hastalloy, or T: Titanium)         Sensor for mass flow with       MFC 400F:       MMC 400F: MFS 1000       MMS 1000       /x15, /x25, /x40, /x50 /x100, /x150, /x250, /x400         MFS 2000       MMS 2000       /x100, /x15, /x25, /x40, /x50 /x100, /x15, /x25, /x40, /x50, /x100, /x15, /x25, /x40, /x50,         Certificate No.       17/20075 (E2)       Issue Date       06 March 2018         Issue Date       06 March 2018       Thorsten Wolff         Expiry Date       12 July 2022       Thorsten Wolff         Sheet       1 of 3       Thorsten Wolff         Hamburg Technical Support Office Lloyd's Register EMEA       Thorsten Wolff	PRODUCER	KROHNE Norwa Dept. KROHNE 1 Strømtangveien 2 3950 Brevik Norway	Marine 1		
designation       designation         Sensor for mass flow with MFC 010:       MFS 1000         MFS 1000       N/A       /x15, /x25, /x40, /x50         MFS 7000       N/A       /x06, /x10, /x15, /x25, /x40, /x50, /x80 (x may be S: Stainless, H: Hastalloy, or T: Titanium)         Sensor for mass flow with       MFC 400F:       MMC 400F: MMC 400F: MFS 1000         MFS 1000       MMS 1000       /x15, /x25, /x40, /x50         MFS 2000       MMS 2000       /x100, /x150, /x250, /x400         MFS 6000       MMS 6000       /x08, /x10, /x15, /x25, /x40, /x50, /x80, /x100, /x150, /x250, /x300         MFS 7000       MMS 7000       /x06, /x10, /x15, /x25, /x40, /x50, /x80, /x100, /x150, /x250, /x300         MFS 7000       MMS 7000       /x06, /x10, /x15, /x25, /x40, /x50, /x80, /x100, /x150, /x25, /x40, /x50, /x80 (x may be S: Stainless, H: Hastalloy, or T: Titanium)         Certificate No.       17/20075 (E2)       Thorsten Wolff         Issue Date       06 March 2018       Thorsten Wolff         Expiry Date       12 July 2022       Thorsten Wolff         Sheet       1 of 3       Thorsten Wolff         Hamburg Technical Support Office       Thorsten Wolff         Hamburg Technical Support Office       Thorsten Wolff	DESCRIPTION	Mass flow meters	5		
MFS 1000 MFS 7000N/A/x15, /x25, /x40, /x50 , x06, /x10, /x15, /x25, /x40, /x50, , /x80 (x may be S: Stainless, H: Hastalloy, or T: Titanium)Sensor for mass flow with MFC 400F: MFS 1000MMC 400F: MFS 1000/x15, /x25, /x40, /x50 , /x100, /x150, /x250, /x400 MS 2000MFS 2000MMS 1000 MFS 2000/x15, /x25, /x40, /x50 , /x100, /x150, /x250, /x400 MFS 6000MFS 7000MMS 1000 MFS 6000/x08, /x10, /x15, /x25, /x40, /x50, , /x100, /x150, /x250, /x400 MFS 7000MFS 7000MMS 7000 MMS 7000/x06, /x10, /x15, /x25, /x40, /x50, , /x80 (x may be S: Stainless, H: Hastalloy, or T: Titanium)Certificate No.17/20075 (E2) Issue DateInorsten Wolff Hamburg Technical Support OfficeExpiry Date12 July 2022Inorsten Wolff Hamburg Technical Support OfficeSheet1 of 3Thorsten Wolff Hamburg Technical Support Office	ТҮРЕ			Comments	
<ul> <li>MFC 400F: MMC 400F: MFS 1000 MMS 1000 /x15, /x25, /x40, /x50 MFS 2000 MMS 2000 /x100, /x150, /x250, /x400 MFS 6000 MMS 6000 /x08, /x10, /x15, /x25, /x50, /x80, /x100, /x150, /x200, /x250, /x300 MFS 7000 MMS 7000 /x06, /x10, /x15, /x25, /x40, /x50, /x80 (x may be S: Stainless, H: Hastalloy, or T: Titanium)</li> <li>Certificate No. 17/20075 (E2) Issue Date 06 March 2018 Expiry Date 12 July 2022 Thorsten Wolff Hamburg Technical Support Office Lloyd's Register EMEA</li> <li>Sheet 1 of 3 Thorsten Wolff Hamburg Technical Support Office</li> </ul>		MFS 1000	N/A	/x15, /x25, /x40, /x06, /x10, /x15, /x80 (x may be S:	/x25, /x40, /x50, Stainless, H:
<ul> <li>MFS 1000 MFS 2000 MFS 2000 MFS 6000</li> <li>MMS 1000 MFS 6000</li> <li>MMS 2000 MMS 6000</li> <li>X100, X150, X250, X400 X08, X10, X15, X25, X50, X80, X100, X150, X200, X250, X300 MMS 7000</li> <li>MMS 7000</li> <li>X06, X10, X15, X25, X40, X50, X80 (x may be S: Stainless, H: Hastalloy, or T: Titanium)</li> <li>Certificate No.</li> <li>17/20075 (E2)</li> <li>Issue Date</li> <li>06 March 2018</li> <li>Expiry Date</li> <li>12 July 2022</li> <li>Sheet</li> <li>1 of 3</li> </ul>					
Issue Date     06 March 2018     Thorsten Wolff       Expiry Date     12 July 2022     Lloyd's Register EMEA       Sheet     1 of 3     Thorsten Wolff		MFS 1000 MFS 2000 MFS 6000	MMS 1000 MMS 2000 MMS 6000	/x100, /x150, /x2 /x08, /x10, /x15, /x100, /x150, /x20 /x06, /x10, /x15, /x80 (x may be S:	50, /x400 /x25, /x50, /x80, 00, /x250, /x300 /x25, /x40, /x50, Stainless, H:
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Sheet     1 of 3       Lloyd's Register EMEA     1 / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / / / / / / / / / / /       Image: Lloyd's Register EMEA     1 / / / / / / / / / / / / / / / / / / /	Issue Date	06 March 2018		Support Office	Lloyd's Register
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TYPE (continues)	Option: MFS 6000	MMS6000	short stem or extended stem, ref. drawing 2911922089 A-001, 3912192089 C-001, 3912992089 A-001, 2911912089 A-001, 3912192089 C-001, 3912982089 A-001	
	Flow Converter: MFC 400F	MMC 400		
	Flow Converter: MFC 010	N/A	Mounted on sensor.	
APPLICATION	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2, ENV3 and ENV5 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 – July 2015.			
STANDARD	Manufacture specification			
RATINGS	Power supply:		MFC 010= 12VDCMFC 400F= 24V AC/DC or 220VACMMC 400F= 24V AC/DC or 220VAC	
	Communication in Size:	terfaces:	Foundation Fieldbus <sup>(1)</sup> Profibus PA and DP <sup>(2)</sup> Modbus, HART® <sup>(3)</sup> <sup>(1)</sup> , <sup>(2)</sup> , <sup>(3)</sup> + Current output, Pulse output DN 6 to 400	
OTHER CONDITIONS	Ratings for application in hazardous areas are to be obtained from the applicable Ex Certificates.			
PLACE OF PRODUCTION	KROHNE Ltd 34-38 Rutherford d Wellingborough United Kingdom	lrive		
Certificate No.	17/20075 (E2)			
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Expiry Date	12 July 2022	Lloyd's Regis		
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The Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

*If the specified standards are amended during the validity of this certificate, the product is to be re-approved prior to it being supplied to vessels to which the amended standards apply.* 

The Design Appraisal Document No. HTS/ETS 36633-18 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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