

1721 Eastern Avenue, Suite 15, Sacramento, CA 95864  
P (916) 481-9017 C (916) 798-4176 [www.slurryengineering.com](http://www.slurryengineering.com)

## Slurry Engineering Mass Flowmeter

**Krohne Mass Flowmeter:** Optimass 7000 3-Inch, IFC 090 Signal Converter

### OPTIMASS 7010 C and 7110 C

Mass flowmeters with integrated  
Modbus converter



- Modbus communication direct from meter; no need for separate converter
- Connection using standard, off-the-shelf, four-core cable
- Cost effective solution since no converter needed
- Applicable for Ex and non-Ex installation
- Full functionality through using Modbus communication:
  - all measured variables
  - ability to program meter
  - sensor and process diagnostics
- Full range of sensor materials, connections and options available



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## OPTIMASS - Coriolis Mass Flowmeters

The new OPTIMASS 7010 C and 7110 C mass flowmeters implement all sensor drive and signal evaluation functions into an integrated front-end electronics module permanently fixed to the sensor.

This new cost effective solution eliminates unwanted and expensive I/O and display functions associated with traditional signal converters and transmitters, and is designed for use in OEM systems or packages where a PLC or DCS is already used for other functions.

### Modbus communications

A simple 4-wire (1 pair data and 1 pair power) interface is all that is required to connect the OPTIMASS meter to the PLC or DCS, utilising its embedded Modbus RTU over RS485 connection. This allows programming, commissioning and measurement over a single data connection.

### Fully specified for process applications

OPTIMASS 7010 C and 7110 C mass flowmeters have class leading specifications for measurement accuracy.

All familiar functions for measurements (flow, density and concentration) and diagnostics (meter and process) are available. These are fully configurable using the Modbus connection.

Hazardous area operation for the meter is possible using compliant barrier modules for the data and power connections.

### Moreover it retains all known benefits of OPTIMASS:

- All sensor materials stainless steel, Hastelloy and titanium
- All standard, as well as hygienic process connections
- High performance with simple installation
- Certified to all relevant industry application and process approvals



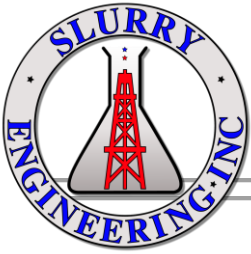
### Technical data

Communication protocol	Modbus RTU over RS485
Baud rate	9600 ... 38400 baud
Power supply	12 V DC $\pm$ 5% and 200 mA max. current
Cable required	2 x twisted pair with overall screen (1 pair power and 1 pair signal)
Maximum cable length	300 m / 1000 ft
Connection topography	Point-to-point or multidrop
Functionality	Full ability to program meter measurement configuration. All measurement variables available as readable address registers.
Hazardous area applications	(for 7010 C only)
ATEX (pending)	EEx ib IIC T6
FM (pending)	Class I Div 1; class I Div 2

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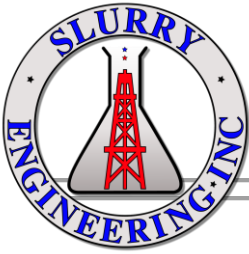


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KROHNE

Calibration Certificate – Kalibrierzertifikat – Certificat d'étalonnage  
DIN 55 350-18-4.2.2

Type / Typ / Type : OPTIMASS 7000 T80  
Sales Order / VK-Auftrag / Commande de vente : 270034958  
Serial Number / Seriennummer / Numéro de série : G140000001703090  
Tag Number / Tagnummer / Repère :

Calibration Method / Kalibriermethode / Méthode d'étalonnage

The calibration was performed in mass flow rigs using weighing scales in start / stop operation. All weighing scales are periodically calibrated by internationally accredited laboratories.

Die Kalibrierung wurde an Massedurchflussständen mit Waagen im Start / Stop-Betrieb durchgeführt. Alle Waagen werden regelmäßig durch international akkreditierte Prüflabore kalibriert.

L'étalonnage a été réalisé sur un banc utilisant des pesons de référence avec plusieurs pesées successives. Tous les pesons sont contrôlés périodiquement par des laboratoires internationaux accrédités.

Test Equipment Data / Kalibrierstand / Données du banc d'étalonnage

Serial Number / Seriennummer / Numéro de série : 2318587/2985292  
Calibration fluid / Kalibrierflüssigkeit / Fluide d'étalonnage : Water / Wasser / Eau  
Uncertainty / Messunsicherheit / Incertitude : 0.035%

Calibration Results / Kalibrierergebnis / Résultats d'étalonnage

Set Flow rate gewählter Durchfluss Débit réglé (kg/h)	Measured Mass gemessene Masse Masse mesurée (kg)	Actual Mass tatsächliche Masse Masse réelle (kg)	Deviation Abweichung Ecart %
35783	1095.1426	1093.6772	0.134
119451	1633.4850	1635.0878	-0.098
193618	1451.1375	1452.0098	-0.060

Calibration Data / Kalibrierdaten / Données d'étalonnage

CF1: 17.7      CF2: 532.76      CF3: 300.00      CF4: 3.7199912      CF5: 1180149.0  
CF6: -50.600849      CF7: 124.03625      CF8: 0.0000000  
CF11: 18.220045      CF12: -56.537399      CF13: -388.95114      CF14: 0.0000000      CF15: -32.432269  
CF16: 0.0000000      CF17: -2.3199999      CF18: 0.0000000      CF19: -6.5922012      CF20: 50.027771  
CF21: 0.0000000      CF22: 0.0000000      CF23: 0.0000000      CF24: 0.0000000      CF25: 0  
CF26: 0.0000000      CF27: 0.0000000  
DCF1: 2      DCF2: 998.99072      DCF3: 1.0000000      DCF4: 90.887451      DCF5: 0  
DCF6: 0.0000000      DCF7: 1.0000000      DCF8: 45.241344

Additional Data / Zusatzdaten / Données complémentaires

Process Connections / Prozessanschlüssen / Raccords process : 3"  
ASME 150 lbs  
Electronic Revision / Elektronik Revision / Version électronique : ER3.3.9\_      S/N: 11154811  
Sensor Electronics / Sensorelektronik / Électronique de mesure : 2.2.1      S/N: 11157309

Calibration Date / Kalibrierdatum / Date d'étalonnage : 2014-06-30

This certificate is produced with EDP and valid without signature / Dieses Zertifikat wurde maschinell erstellt und ist ohne Unterschrift gültig / Ce certificat a été géré par un système automatisé - il est valide sans signature -

