

ABB MEASUREMENT & ANALYTICS | DATA SHEET

Mobile flow calibration service

Quick, convenient, on-site flowmeter calibration





Measurement made easy

Why come to us, when we can come to you?



Maximum uptime of your assets and plant in a cost-effective way



Schedule calibrations during your normal maintenance activities



No need to send your flow meter away for calibration reducing logistical effort and dead time

Description of service and calibration methodology

The mobile calibration rig is designed to run potable water through a closed loop between two trolleys. Trolley one comprises a pump, variable speed driver and water tank for generating the water flow around the loop, trolley two comprises the reference flow meters and the customer flow meter for testing. All measurement data is controlled by a PLC which is also used to control the flow rate and the generation of a calibration certificate.

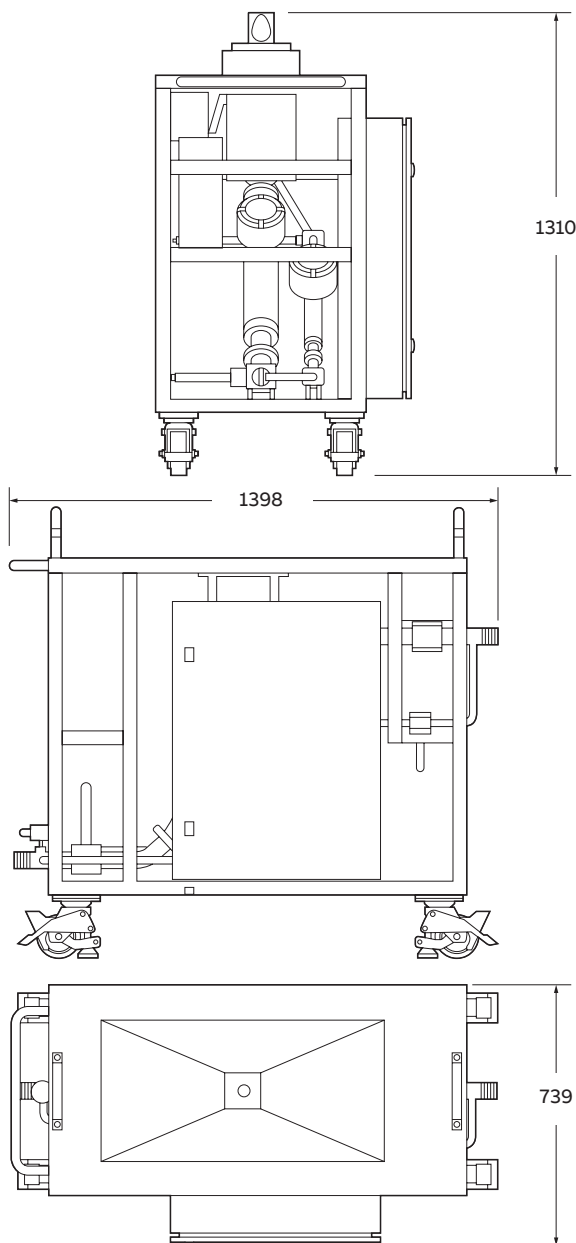
The mobile flow calibration service utilizes the comparison method of calibration. In this method, the flowmeter under calibration is installed in a pipeline downstream of a

reference, or master, flowmeter with a known calibration. Once the flow of water through both meters is stable, a timer is started and the outputs of both meters are simultaneously monitored. After a set period, the timer is stopped. Using the data from the calibration run enables the average flowrate of the meter under test to be compared with the master meter, with the difference being the error.

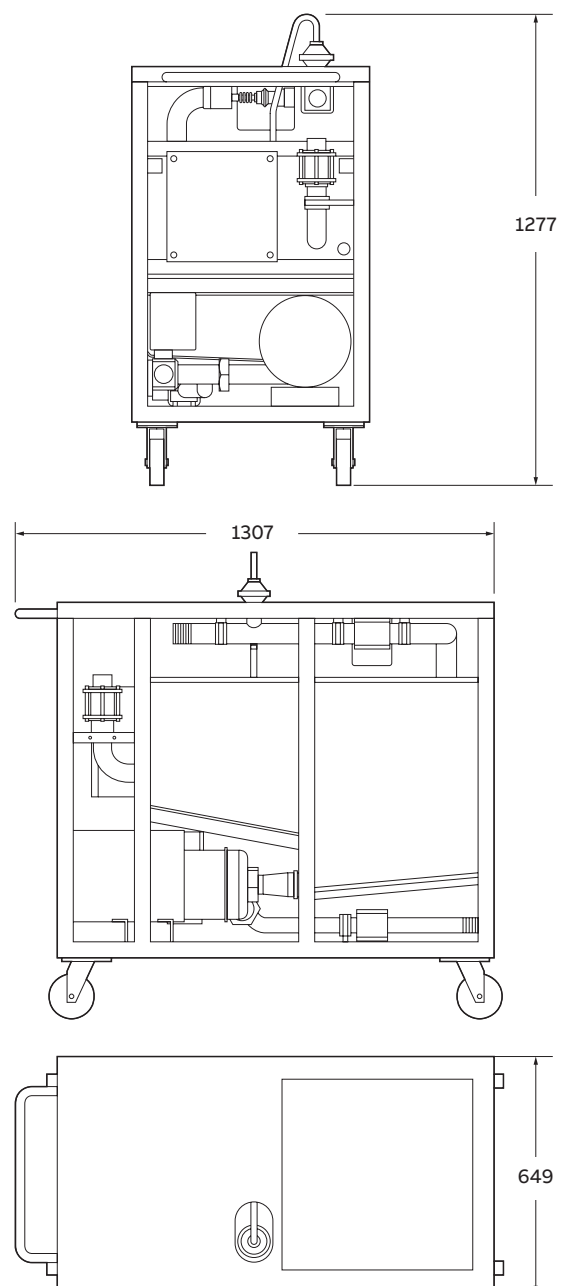
The comparison master Coriolis flow meters have been calibrated to high accuracy ($\pm 0,1\%$) via gravimetric methodology in ABB's Goettingen flow laboratory according to national traceable standards.

DIMENSIONS – FLOW CALIBRATION RIG

Dimensions in mm



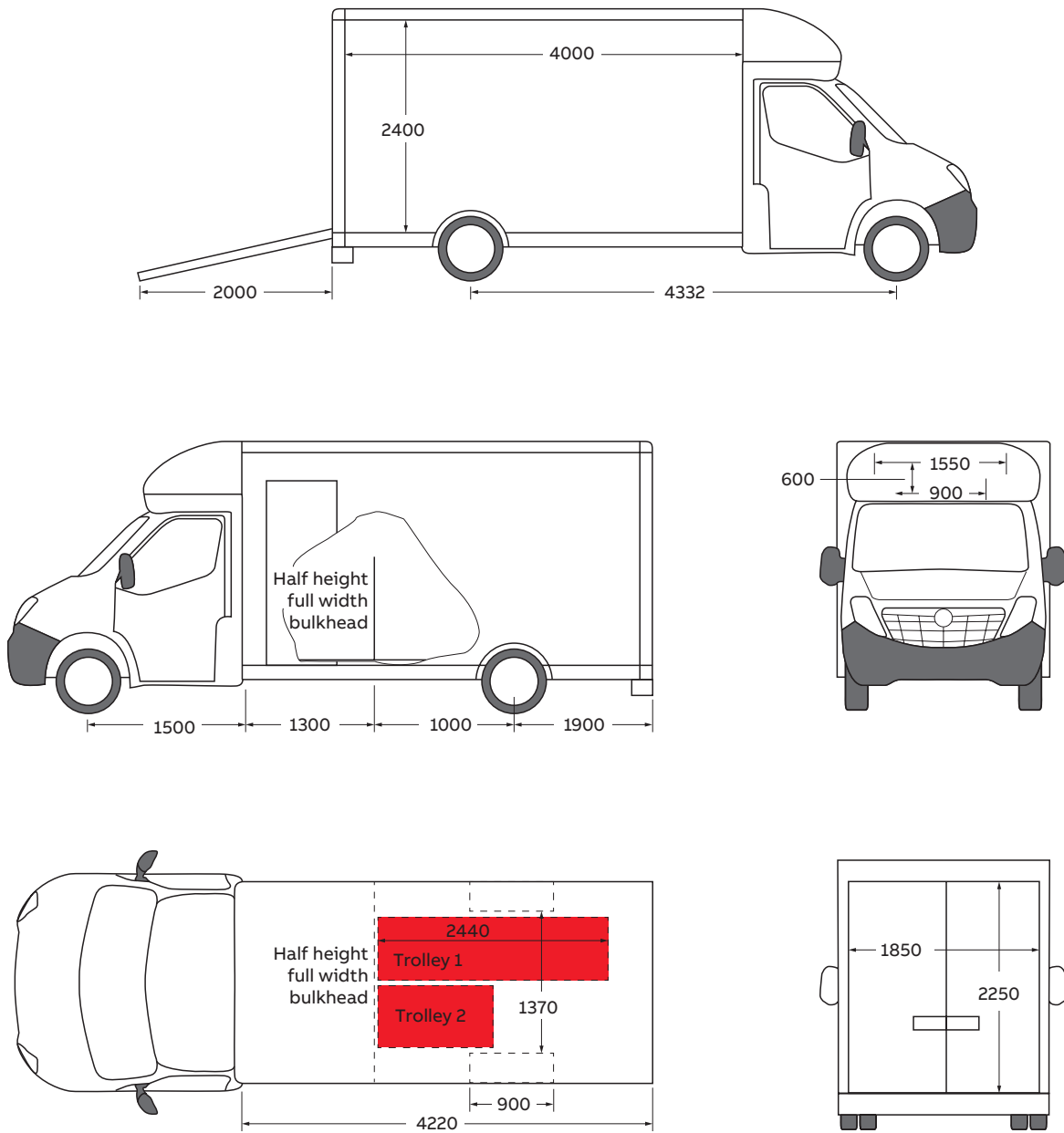
Reference flow meter trolley



Water trolley

DIMENSIONS – FLOW CALIBRATION VEHICLE

Dimensions in mm



Specification

Customer flow meter

Supported communications / outputs

HART
MODBUS
4 to 20 mA active and passive
Pulse output
Others upon request

Supported power supply options

230 V AC
110 V AC
24 V DC
Battery

Supported flow technologies

Electromagnetic flow meter
Coriolis flow meter

Supported pipe connections

Food industry fittings acc. DIN 11851
Tri-clamp ISO 2852
PN10-40 EN1092 flange
ASME CL150 flange
Wafer
Others on request

Supported pipe diameters

DN15
DN25
DN32
DN40
DN50

Supported manufacturers

ABB
3rd party manufacturers

Flow calibration rig

Weight

Water trolley = 250 kg*
Reference flow meter trolley = 230 kg*

Ambient operating temperature

10 to 60 °C**

Storage temperature

-20 to 60 °C

Process temperature

5 to 25 °C

Process liquid

Potable water

Process liquid conductivity

>5 uS/cm

Operating humidity

Up to 95 % RH, non-condensing

Ingress protection

IP44

Power supply requirements

Power supply voltage
230 V AC, 50 Hz
Maximum current 13 A

EMC

Emissions and immunity
EN 61326-1 / IEC 61326 industrial specification

Safety

General safety
CE (EN61010)

Wetted materials

Stainless steel
PTFE
Nitrile

Flow calibration vehicle

Weight

Fully loaded weight: 3500 kg

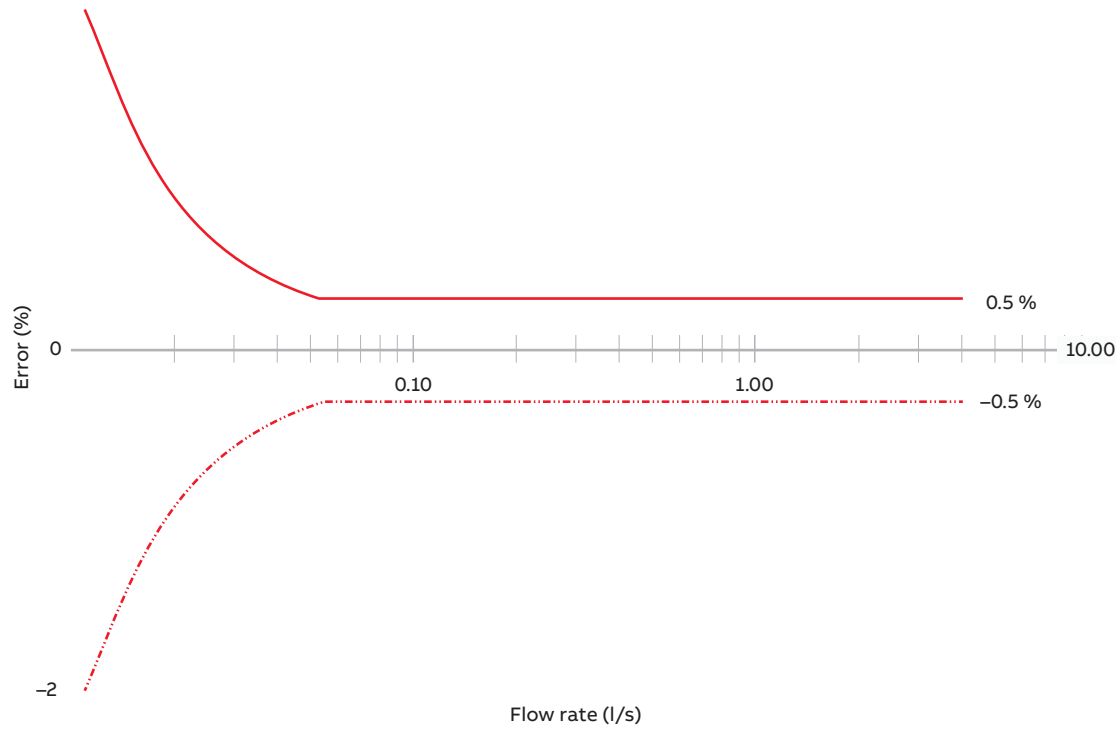
*Excluding water and connecting pipework / MUT

** Calibration accuracy is referenced to 20 °C standard laboratory conditions

...Specification

Mobile flow calibration rig and accuracy

Maximum flow rate (assuming 13A power supply) = 7.5 l/s



Ordering information

	Main code				
	SMD120-M	N	A	NN	AN
Mobile flow calibration service					
ABB		1			
Third party		2			
Special – customer to specify		9			
Flow meter type					
Electromagnetic			A		
Coriolis			B		
Special – customer to specify			Z		
Flow meter size (mm)					
15				0015	
20				0020	
25				0025	
32				0032	
40				0040	
50				0050	
Special – customer to specify				9999	
Process connection type					
Flange					D1
Male thread					M1
Food industry fittings acc. DIN 11851					F1
Tri-Clamp					T1
Wafer					W1
Others					Z9
Number of calibration points					
2					A
3 (standard)					B
4					C
5					D
Special – customer to specify					Z

To be ordered in conjunction with a mobilization part number:

- 3KXS082100L0064 – On-site Calibration Services Half Day
- 3KXS082100L0065 – On-site Calibration Services Full Day
- 3KXS082100L0066 – On- site Calibration Services Two Days

ABB Flow
Services



Flow
products



ABB Limited

Measurement & Analytics

Oldends Lane, Stonehouse
Gloucestershire, GL10 3TA
UK

Tel: +44 (0)1453 826661

Fax: +44 (0)1453 829671

Mail: instrument.support@gb.abb.com

abb.com/measurement

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.

© ABB 2018

3KXS310120R1001