

23041414 A

Flow Calibration with Adjustment

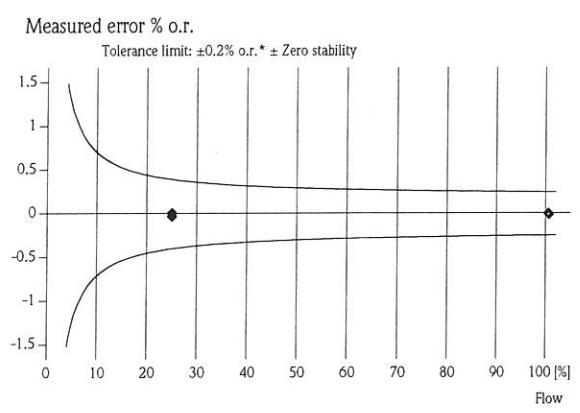
3059949-6311140

3004098604
 Purchase order number
 US-3007181910-10 / Endress+Hauser Flow
 Order N°/Manufacturer
 8FF15-AG20AANAB1NN
 Order code
 CNGmass DN15
 Transmitter/Sensor
 V1003216000
 Serial N°
 -
 Tag N°

FCP-6.H
 Calibration rig
 47.76682 lb/min (\cong 100 %)
 Calibrated full scale
 Service interface
 Calibrated output
 5.2720
 Calibration factor
 -36
 Zero point
 66.8 °F
 Water temperature

Flow [%]	Flow [lb/min]	Duration [s]	m target [lb]	m meas. [lb]	Δ o.r.* [%]
24.7	11.799	30.1	5.9147	5.9131	-0.03
24.7	11.800	30.1	5.9156	5.9163	0.01
100.5	48.011	60.2	48.139	48.141	0.00
100.7	48.079	60.2	48.212	48.208	-0.01
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

*o.r.: of reading



For detailed data concerning output specifications of the unit under test, see Technical Information (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN), Suzhou (CN) and Itatiba (BR).

Jeremiah Turnley
Operator

01-09-2023
Date of calibration
Endress+Hauser Flow USA, Inc.
2330 Endress Place
Greenwood, IN 46143

Certified acc. to
ISO 9001, Reg.-N° 030502.2
ISO 14001, Reg.-N° EMS561046

23041415 H

Standard Density Calibration with Adjustment

31184824-6311140-5704744

CNGmass DN15

Transmitter/Sensor

V1003216000

Serial N°

FCP-6.H

Calibration rig

C0 = -11644

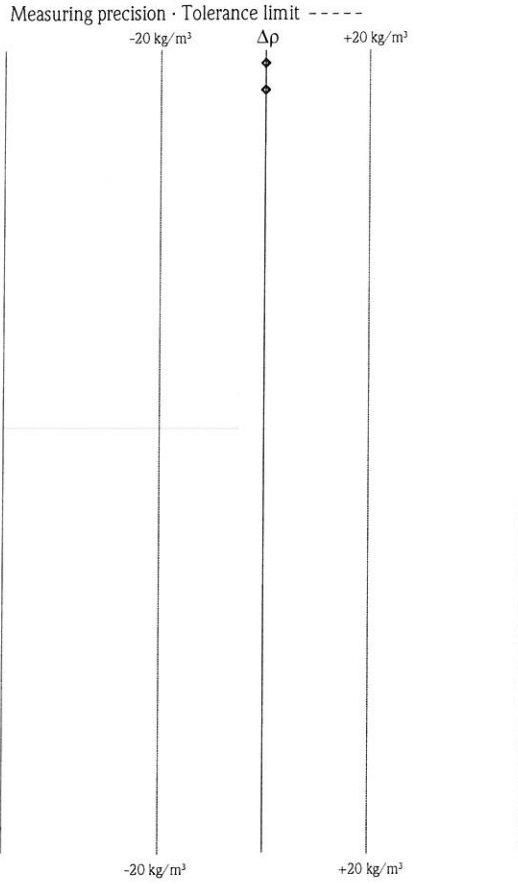
C1 = 5.0687E+9

Density coefficient

C2 = -2.0528E+6

Density coefficient

Medium	Temp. [°F]	ρ target [kg/m ³]	ρ meas. [kg/m ³]	Δρ [kg/m ³]	Freq. [Hz]
Air	70.2	1.20	1.20	0.00	656.9
Water	68.3	999.01	999.01	0.00	630.6
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-



Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN), Suzhou (CN) and Itatiba (BR).

Jeremiah Turnley

01-09-2023

Date of calibration

Endress+Hauser Flow USA, Inc.
2330 Endress Place
Greenwood, IN 46143

Jeremiah Turnley

Operator

Certified acc. to
ISO 9001, Reg.-N° 030502.2
ISO 14001, Reg.-N° EMS561046

Parameter Settings

Order information

Customer	TULSA GAS TECHNOLOGIES INC US-74146-4709 TULSA
Customer purchase order	HCI112922
Sales order number / Item	3004098604
Internal order number / Item	US-3007181910-10

Device information

Description	CNGmass DN15
TAG	
Serial number	V1003216000
Order code	8FF15-AG20AANAB1NN
Extended order code	-

Device

Device software	V1.01.00
-----------------	----------

Modbus

Baud rate	19200
Device address	247
Tag name	-----

Pulse output 1

Pulse value	0.004 lb
Pulse width	0.5 ms
2nd channel	Redundancy 90°

Operator

Greenwood, 2023-09-01, Andy Inthisane

This document was generated electronically and is valid without signature.



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Return Authorization Policy

Repair and Calibration of Used Equipment

Endress+Hauser must assign a Return Authorization (RA) number to any instrument you plan to return for factory repair or calibration service. Please mark the Return Authorization (RA) number clearly on all shipping cartons and paperwork. No product returns are accepted without an RA number. Endress+Hauser will return to the sender at the sender's expense all packages that do not have the RA number clearly marked on them.

Within the USA, RA requests for factory repair and calibration service can be handled 24 hours a day on-line. Please visit our website at:

www.us.endress.com/factoryrepair.

You will be prompted to provide the necessary information and within minutes you will receive your RA number and complete shipping instructions. The issuance of an RA number does not automatically mean that a repair will be covered under warranty. An Endress+Hauser associate will contact you regarding the disposition of your returned equipment.

When requesting an RA number, please be prepared to provide the following information:

Customer name
Customer shipping address
Customer billing address
Customer phone number
Customer contact
Customer contact e-mail address
Equipment type
Original sales order or purchase order number
Reason for return
Failure description, if applicable
Process material(s) to which the equipment has been exposed
Material used to de-contaminate and clean equipment
New purchase order number for the repair or calibration

OSHA Hazard Communication Standard 29CFR 1910.1200 mandates that we take specific steps to protect our employees from exposure to potentially hazardous materials. All equipment must be completely cleaned and decontaminated before being returned. If the equipment being returned was exposed to a hazardous substance as defined by OSHA, a letter certifying that the equipment has been decontaminated, as well as a copy of the required Material Safety Data Sheets (MSDS) for each hazardous substance identified must be included with the returned equipment.

Before returning used equipment:

- Each package must be clearly marked with an RA number
- A Declaration of Hazardous Materials and Decontamination must be included inside the package
- A duplicate Declaration of Hazardous Materials and Decontamination must be visibly attached to the outside of the package
- An MSDS for each substance that has come in contact with the equipment must be included inside the package
- A duplicate MSDS must be visibly attached to the outside of the package

To get a return authorization number for repair or calibration service by phone, please call:

In the US: 800-642-8737

In Canada: 800-668-3199

NOTICE

If you are requesting a return for credit, contact the Endress+Hauser sales department at 888-ENDRESS to first determine if an RA number will be issued.

For repair and calibration in other countries, please visit www.endress.com

Notes on Safety

⚠ WARNING

Electrical shock could cause death or serious injury. If the sensor is installed in a high voltage environment and a fault or installation error occurs, high voltage may be present on the transmitter leads and terminals.

Safe and secure operation of the transmitter can only be guaranteed if the operating instructions and all safety notes are read, understood and followed.

Correct use

The manufacturer cannot be held responsible for damage caused by misuse of the unit.

Separate Ex documentation should be obtained for measurement systems in hazardous areas. The installation conditions and connection values indicated in these instructions must be followed!

Installation, commissioning and operation

The unit is constructed using the most up to date production equipment and complies to the safety requirements of the local guidelines. However, if it is installed incorrectly or misused, certain application dangers can occur. Installation, wiring and maintenance of the unit must only be done by trained skilled personnel who are authorized to do so by the plant operator. This skilled staff must have read and understood these instructions and must follow them to the letter. The plant operator must make sure that the measurement system has been correctly wired to the connection schematics.




Hazardous areas

When installing the unit in a hazardous area the national safety requirements must be met. Make sure that all personnel are trained in these areas. The measurement and safety values must be followed in all these installations.

Returns

Please follow the Return Authorization Policy on the back of this sheet.

Safety pictograms and symbols

<p>⚠ DANGER</p> <p>Causes (consequences) Consequences of non compliance (if applicable)</p> <ul style="list-style-type: none"> ▶ Corrective action ▶ This symbol alerts you to a dangerous situation. Failure to avoid the situation will result in a fatal or serious injury. 	
<p>⚠ WARNING</p> <p>Causes (consequences) Consequences of non compliance (if applicable)</p> <ul style="list-style-type: none"> ▶ Corrective action ▶ This symbol alerts you to a dangerous situation. Failure to avoid the situation can result in a fatal or serious injury. 	
<p>⚠ CAUTION</p> <p>Causes (consequences) Consequences of non compliance (if applicable)</p> <ul style="list-style-type: none"> ▶ Corrective action ▶ This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries. 	
<p>NOTICE</p> <p>Causes (consequences) Consequences of non compliance (if applicable)</p> <ul style="list-style-type: none"> ▶ Corrective action ▶ This symbol alerts you to situations which may result in damage to property. 	
Symbol	Meaning
	<p>Explosion protected, type examined operating equipment If this icon is on the device's nameplate, the device can be used in hazardous areas.</p>
	<p>Hazardous area This symbol identifies the hazardous area in the diagrams in these Operating Instructions.</p> <ul style="list-style-type: none"> – Devices that are used in hazardous areas or cables for such devices must have the corresponding type of protection.
	<p>Safe area (non-hazardous areas) This symbol identifies the non-hazardous area in the diagrams in these Operating Instructions.</p> <ul style="list-style-type: none"> – Devices in non-hazardous areas must also be certified if connection cables run through a hazardous area.

Though the information provided herein is believed to be accurate, be advised that the information contained herein is NOT a guarantee of satisfactory results. Specifically, this information is neither a warranty nor guarantee, expressed or implied, regarding performance;

merchantability, fitness, or other matter with respect to the products; and recommendation for the use of the product/process information in conflict with any patent. Please note that Endress+Hauser reserves the right to change and/or improve the product design and specifications without notice.