



Dresser™ Model 10C25 Series K Meter

Installation Supplement

Roots Dresser 10C25-10M



Systems, Inc.

International Measurement and Control Systems

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1 Introduction

This manual provides information for installing the Dresser 10C25 Series K Digital Index non-compensated meter (10C25 DI) and the 10C25 Temperature Compensated Digital Index meter (10C25 DI-T). Please read the entire manual for information about how to properly and safely install the meter.

This manual provides recommendations when no established company procedure or practice is available.

The following additional resources are available:

- The *Dresser™ MeterWare Software Manual*, which contains detailed information about the meter's digital index software.
- The *Dresser™ Model 10C25 Series K Meter Installation, Operation, and Maintenance Manual*, which contains detailed information about installing, operating, and maintaining the Model 10C25 meter.

Manuals are available by request or online at www.dresserutility.com.

2 Receiving, Handling, and Storage

Follow the steps and recommendations in this section to ensure your meter and its accessories are ready for installation and use.

2.1 At Time of Delivery

Perform the following steps when you receive your shipment:

1. Check the packing list to verify all items have been received.
2. Inspect each item for damage and, if necessary:
 - a. Record any visible damage or shortages on the delivery record.
 - b. File a claim with the carrier.
 - c. Immediately notify your Dresser meter supplier.



Note:

- Do not accept any shipment that appears damaged without immediately inspecting the contents for damage.
- Check the meter for free rotation soon after arrival. Internal working parts might be damaged without obvious external evidence. To check the meter, blow dry air lightly into the meter inlet to verify the free rotation of the impellers.

2.2 Storage

If the product is not tested or installed soon after it is received, store it in a dry location in the original shipping container for protection within the meter's operating temperature range of -40°F to 140°F (-40°C to 60°C).

3 Parts Identification

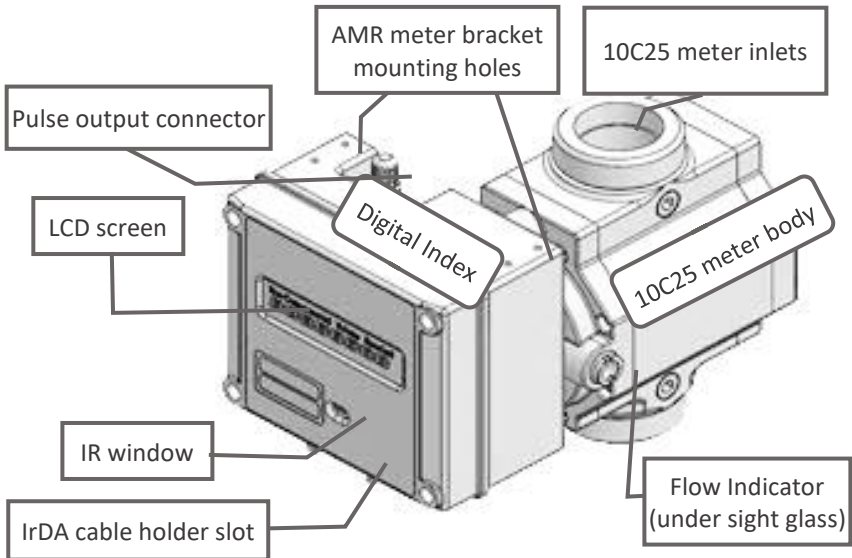


Figure 1: Parts identification

3.1 Meter Display

View the meter information on its LCD (liquid-crystal display) screen.

3.1.1 Scrolling Through the Screens

To scroll through the different screens, swipe a magnet across the black dot to the right of the LCD screen on the meter's label, as shown in Figure 2.



Note: The screen will not change if the magnet is swiped on another area of the label.



Figure 2: Magnet used to change screens

The magnet can be purchased as part of the Communications Kit or individually by part number, as shown in Table 1. Contact the Factory for pricing.

Table 1: Magnet Part Numbers

Part	Number (P/N)
Communications Kit	060542-000
Individual Magnet	060541-000

3.1.2 LCD Screen Displays

The home or default screen displays either Compensated Volume or Non-Compensated Volume, depending on the meter version and customer configuration. After approximately thirty (30) seconds of inactivity, the home screen displays.

Swipe the magnet vertically over the black dot on the meter's label until the screen you want to view displays. Depending on the meter configuration, some screens might not display.

After the value's name or parameter displays for three to five (3–5) seconds, the screen displays the parameter's value.



Note: Use the Dresser MeterWare software to configure parameters on the screens by selecting or clearing the checkbox for the parameter to be displayed (refer to the *Dresser MeterWare Software Manual*).

3.2 Flow Indicator

The white, reflective Flow Indicator located on the top of the meter (refer to Figure 3) serves two purposes: It verifies the impeller rotation to indicate that gas is flowing, and it is used as an optical photo-sensor (scanner) when a proving device is testing the meter for accuracy.

Each revolution of the Flow Indicator indicates 0.007407 cf (0.0002098 m³) of non-compensated gas flow through the meter.



Note: Keep the Flow Indicator covered by the rubber cap to help protect the viewing port and keep it clean.



Figure 3: Flow Indicator location under cover in meter

4 Problems with Installation or Operation

If you encounter any serious problems during installation or initial operation of the meter, immediately notify your Dresser meter supplier.



Note: Do not attempt repairs or adjustments. Doing so might void all claims for warranty.

When reporting a suspected problem, complete the following steps:

1. Provide the following information to your Customer Service Representative:
 - Purchase order number and/or sales order number
 - Product model, serial number, and/or bill of material number
 - Description of the problem
 - Application information such as gas type, pressure, temperature, and flow characteristics
2. Pack all returns in the original shipping container or similar, if available, and use shipping material that protects the product from damage during transit.
3. Contact your Dresser meter supplier to obtain an RMA (Return Materials Authorization) number.

The Dresser Product Services Department offers professional services for all Dresser Meters and Instruments products. Authorization for return is required for all products shipped to the Factory for repair, calibration, warranty, exchange, or credit. An RMA number is required to obtain authorization.

5 Meter Installation



WARNING

Before installation, check the meter nameplate and verify the MAOP (Maximum Allowable Operating Pressure) and rated capacity for flow rate meet the installation requirements.

This section provides detailed information about proper installation of the 10C25 meter.

5.1 Preinstallation Considerations

Dresser meters are designed for continuously measuring and indicating accurate measurement of clean, dry natural gas and other non-corrosive gases at constant or varying flow rates. The Dresser 10C25 meter has excellent rangeability and is capable of accurately measuring small pilot loads. Contact your Dresser meter supplier for a list of approved gases or additional performance details.

5.1.1 Installation Size Considerations

Verify that the selected installation location provides sufficient space for the meter. Also allow additional space for an attached AMR (automatic meter reading) device, if applicable.

Leave sufficient space around the meter to allow access to the LCD screen, AMR device, and cable access for testing as applicable.

For detailed dimensions of the 10C25 meter, refer to Section 13 and the diagrams in the *Dresser Model 10C25 Series K Meter Installation, Operation, and Maintenance Manual*.

5.1.2 Environmental Considerations

The meter's temperature operating range is from -40°F to 140°F (-40°C to 60°C). Verify that the location where the meter is installed allows the temperature of the meter to remain within this range.

Ensure the meter can remain level within 1/16 inch per foot (5 mm/m) in any direction, side to side, and front to back.

5.1.3 Piping Configurations

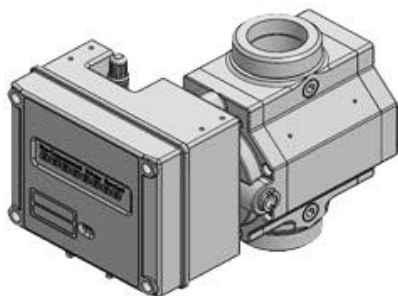


Figure 4: Top inlet (vertical)

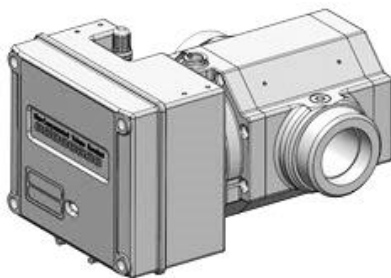


Figure 5: Side inlet (horizontal)

The line mounted Dresser 10C25 meter can be installed in either a top inlet (vertical), a side inlet (horizontal), or a bottom inlet (vertical) configuration.

A top inlet in a vertical pipe line with gas flow downward is the preferred or recommended installation. The top inlet mounting allows gravity to pass dirt, pipe scale, or other debris through the meter.

A 60 mesh screen is recommended in the inlet connection.

CAUTION

- **To avoid accumulation of condensate and foreign materials in the metering chamber, do not install the meter lower than the discharge pipe run. Use a screen or strainer upstream of the meter to remove liquids and foreign matter (pipe sealant, tape, weld slag, etc.) from the gas stream. A 60 mesh screen is recommended.**
- **Do not install a lubricated gas valve directly before a meter; excess valve lubricant or other foreign material can stop impeller rotation.**

A meter bypass allows the meter to be tested by using a transfer prover while it is mounted in line.

If over-speed conditions can occur, a restricting flow orifice plate should be installed two to four (2–4) pipe diameters downstream of the meter outlet. Contact Dresser Meters and Instruments for sizing, pricing, and availability. The warranty does not cover over-speed conditions.

5.1.4 Safety Considerations



WARNING

To reduce the risk of severe injury or death, follow your company guidelines and industry accepted practices. Other safety considerations are provided below:

- This equipment is designed to operate at temperatures between -40°F and 140°F (-40°C to 60°C). Prior to going on-site for installation or maintenance, make sure proper safety equipment is worn before handling the equipment and that you are properly dressed for the worksite environment temperatures.
- Beware of sharp surfaces and potential pinch points while performing installation, maintenance, and repair procedures. Use proper personal protective equipment and procedures.
- Follow proper safe site work practices to prevent fall and drop hazards if equipment is installed/serviced/maintained at elevated heights.
- For installations in confined spaces, allow adequate room to safely handle product and equipment without causing bodily strain. Also, verify proper ventilation is in place to maintain a breathable atmosphere.

5.1.5 Installation Recommendations

Follow your company guidelines and industry accepted practices. In addition:

- Verify protective devices are in place to prevent personal injury and damage to vehicles and equipment in areas of reduced visibility, such as next to parking lots or where the meter can become covered in snow.
- Prevent debris and moisture from entering the meter to avoid possible damage and restriction of gas flow. A strainer or filter

upstream of the meter may be used to help remove contaminants such as pipe sealant, tape, and weld slag from the gas stream.

5.2 Placing Meter in Line

Perform the following steps to install the meter in line:



DANGER

Venting gas into the atmosphere can create a hazardous environment. Follow your company guidelines for venting gas into the atmosphere.

1. Before installing the meter, perform the following steps:
 - a. To prevent damage to the meter, purge the gas line to ensure the upstream piping is clean of scale, dirt, liquids, and other debris. This purge is often done by venting the line to the atmosphere.
 - b. If needed, change the orientation of the digital index for the configuration (vertical or horizontal) in which the meter will be installed. For more information, refer to the *Dresser 10C25 Series K IOM Manual*.
 - c. Verify the impellers turn freely and no objects or contaminants are in the measuring chamber. To check the meter, blow dry air lightly into the meter inlet to verify the free rotation of the impellers.

Depending on the meter's condition, the meter might need to be flushed with an approved solvent. Verify the measuring chamber is clean and dry and the impellers turn freely before installing.

For information about cleaning the meter, refer to Section 11.3.

2. Connect the meter inlet to the gas supply side of the line. Verify the gas will flow in the same direction as the arrow on the meter body nameplate.



Figure 6: Gas flow direction

3. Install the meter without piping strain to prevent binding.
4. Check the orientation of the meter with a level. The meter must be level within 1/16 inch per foot (5mm/m) in any direction, side to side, front to back.

6 Meter Startup

After proper installation and leveling of the meter as described in Section 5, perform the following steps to start up the meter:

1. Slowly open the meter inlet valve just enough to allow gas into the meter.

This gas flow allows the meter to pressurize. The Flow Indicator may start to rotate during this process.

CAUTION

Do not exceed five (5) psig/second (35 kPa/second) maximum when pressurizing the meter. Rapid pressurization can cause an over-speed condition, which may damage the meter. Resulting damage is not covered by warranty.

2. Open the bypass and outlet (downstream of meter) gas valves.
3. Partially open the meter inlet gas valve until the meter starts operating at low speed. Throttling of the bypass valve might be necessary to initiate gas flow through the meter.

4. Verify gas is flowing through the meter by watching for movement of the Flow Indicator to indicate impeller rotation, and then proceed depending on the results:
 - If movement is present, go to Step 5.
 - If the Flow Indicator is not turning, verify gas is being delivered to the meter.
 - If gas is flowing to the meter inlet and the Flow Indicator is not moving, go to Step 6.
5. Let the meter operate at low speed for several minutes. Listen closely for unusual scraping or knocking sounds:
 - If unusual sounds are present, go to Step 6.
 - If the meter is operating normally, go to Step 7.
6. If unusual sounds are present or the Flow Indicator is not turning, place the meter in bypass. Slowly depressurize and vent all pressure from the meter set before checking for piping misalignment, piping strain, torsion, or other related problems. After the problem has been resolved, repeat the startup procedure starting from step 2.



WARNING

Do not adjust or work on the meter before slowly depressurizing and venting all pressure from the meter set in accordance with company procedures or industry guidelines.

7. When the meter is operating smoothly, slowly open the inlet valve until a full line flow is passing through the meter and the inlet valve is fully open.
8. Slowly close the bypass valve.
9. After the meter is pressurized, follow your company's authorized procedures or common industry practices to leak test the meter and all pipe connections. Soapy water, Snoop®, or gas analyzers

are commonly used for this procedure. The meter also incorporates a leak test feature, as described in Section 7.

7 Downstream Leak Tests

A leak test is commonly performed on a meter set after it is installed. The leak test feature on the 10C25 meter can detect a leak (or gas flow) at any point downstream of the meter cartridge.



Note: The meter will not detect leaks that are flowing below the start rate of the meter. Flow above one (1) cfh is measured at +90% accuracy.



WARNING

Adhere to federal, state, company, and local codes and procedures as applicable.

To perform a downstream leak test, use one of the following methods:

- Flow Indicator Method
- Electronic Method using the magnetic interface
- Electronic Method using the Dresser MeterWare software interface

7.1 Flow Indicator Method

The Flow Indicator is tied directly to the meter impellers and is extremely sensitive to flow.

To detect a leak, look at the white Flow Indicator on the meter and ensure it is not rotating. If it is rotating, gas is flowing downstream of the meter.

For more information about the Flow Indicator, refer to Section 3.2.

7.2 Electronic Method – Magnetic Interface

If the **LEAKTEST** screen is not available, use the Dresser MeterWare software to enable this test feature on the meter. For information about enabling this feature, refer to the *Dresser MeterWare Software Manual*.

1. Use the magnet to scroll through the LCD screens until **LEAKTEST** displays.



Figure 7: Leak Test (LEAKTEST) LCD screen

2. Hold the magnet on the black dot for five (5) seconds until **LKTST.RUN** appears, and then remove the magnet. The leak test process begins.



Figure 8: Leak Test Run (LKTST.RUN) LCD screen

The meter uses a preconfigured test sequence to run the leak test based on acceptable flow/volume limits and time duration. Use the Dresser MeterWare software to change these parameters.

The default is a maximum flow rate of 0.5 cfh with a test duration of two (2) minutes.

After the leak test process completes, either a Leak Test Pass Screen (Figure 9) or a Leak Test Fail Screen (Figure 10) displays.

The meter holds this leak test result for 24 hours. To access this test result within this time, view the parameter value for **LEAKTEST**.



Figure 9: Leak Test Pass (LKT PASS)
LCD screen



Figure 10: Leak Test Fail (LKT FAIL)
LCD screen

3. If you want to repeat the leak test, first clear the screen by displaying the leak test result and holding the magnet on the black dot next to the display screen. The screen returns to the Leak Test run screen (**LKTST.RUN**) shown in Figure 8.

7.3 Electronic Method – MeterWare Interface

The Leak Test feature is also accessible in the Dresser MeterWare software through the **Advanced** screen, as shown in Figure 11.

This method requires connecting to the meter by using the IR (infrared) communication cable. The IrDA cable refers to the IR dongle connected to the USB extension cable. For more information, refer to Appendix A.

With the Dresser MeterWare software, you can adjust the test parameters and run the leak test (refer to Figure 12).

After the leak test process completes, PASS or FAIL displays on the screen (refer to Figure 13) and on the meter (as described in Section 7.2).

For more information about running a leak test by using the Dresser MeterWare interface, refer to the *Dresser MeterWare Software Manual*.

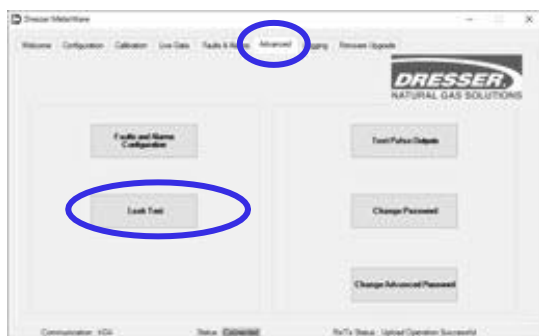


Figure 11: Advanced screen in Dresser MeterWare

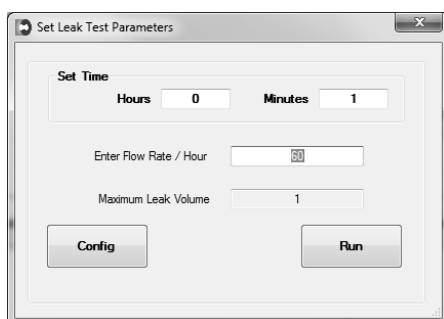


Figure 12: Leak Test Parameters screen in Dresser MeterWare

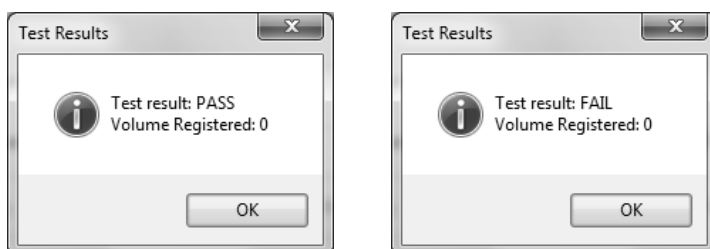


Figure 13: Leak test pass/fail indications in Dresser MeterWare

8 AMR Installation

For information about installing an AMR (automatic meter reading) device, refer to the *Dresser 10C25 Series K IOM Manual*.

9 Pulse Output Connections

This section provides information about connecting the pulse outputs with the meter and configuring them with the Dresser MeterWare software.

Each Dresser 10C25 meter comes standard with two (2) flow frequency pulse outputs (Pulse Outputs 1 and 2) that represent volumetric information for remote data collection. Pulse Outputs 1 and 2 can be configured for faults and alarm signals. Pulse Output 3 is reserved for fault and alarm signals only.

The pulse output cable plugs into the pulse output connector on the digital index.



Figure 14: Pulse output connector

This method requires connecting to the meter by using the IR (infrared) communication cable. The IrDA cable refers to the IR dongle connected to the USB extension cable (refer to Appendix A).

9.1 Pulse Output Allocation Settings and Testing

In the Dresser MeterWare software, pulse output allocation is configured on the **Volume Configuration** screen (refer to Figure 15).

For more information about the settings on this screen, refer to the *Dresser MeterWare Software Manual*.



Note: Some customers have their meter configured by the Factory. Verify your company policy before making any configuration changes.

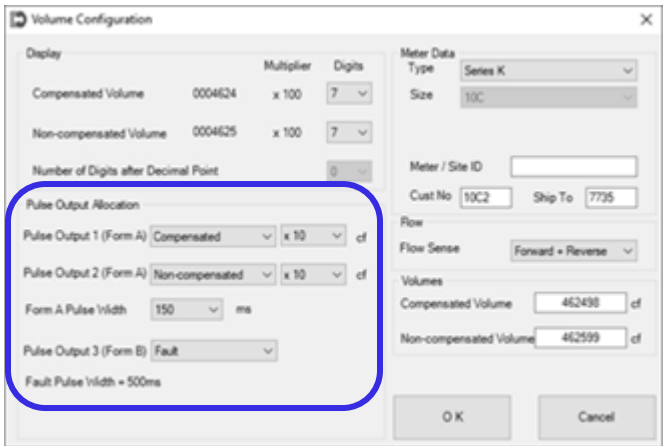


Figure 15: Pulse Output Allocation fields on Volume Configuration screen

To send test pulses to verify the pulse outputs are connected correctly, use the MeterWare software **Test Pulse Outputs** function on the **Advanced** screen (refer to Figure 16). The **Test Pulse Outputs** feature allows you to specify the number of pulses to test pulse outputs 1, 2, and 3. The pulse width of the Compensated and Non-Compensated Volume test pulses is the pulse width specified on the **Volume Configuration** screen.

For more information about configuring and testing pulse outputs, refer to the *Dresser MeterWare Software Manual*.



Figure 16: Test Pulse Outputs on the Advanced screen

9.2 Wiring Instructions for Hazardous Locations

To maintain compliance with CSA certification, use a suitable Intrinsic Safety barrier for a Class 1, Division 1 hazardous area for groups A, B, C, and D.

Do not exceed the following input values for the barrier device:

- $V_i = 8.2V$
- $I_i = 10\text{ ma}$

The OUTPUT and power handling capability of a barrier should not exceed:

- $V_{out} = 30V$
- $I_{out} = 50\text{ ma}$

For hazardous areas, use a recommended barrier such as Turck Brand IM1-12EX-T Single Channel or IM1-22 EX-R Dual Channel Barrier or an equivalent.

For a wiring diagram for products in hazardous locations, refer to the *Dresser 10C25 Series K IOM Manual*.



WARNING

Products certified as intrinsically safe installations shall be:

- Installed, put into service, used, and maintained in compliance with national and local regulations and in accordance with the recommendations contained in the relevant standards concerning potentially explosive atmospheres.
- Used only in situations that comply with the certification conditions shown in this document and after verifications of their compatibility with the zone of intended use and the permitted maximum ambient temperature.
- Installed, put into service, and maintained by properly licensed and trained professionals who have undergone suitable training for instrumentation used in areas with potentially explosive atmospheres.

Table 2: 10C25 AMR Pulse Output Locations


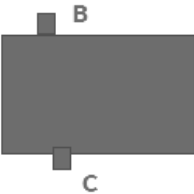

Top Only	Top and Bottom	Bottom Only
		

Table 3: Pulse Output Cable Guide

Telemetry Output (refer to Table 2)				Pulse Output	Name	Wire Color	Pulse Type
A	B	C	D				
✓	✓	-	✓	Pulse Output 1 (+)	PO1 (+)	Brown	Form A
✓	✓	-	✓	Pulse Output 1 (-)	PO1 (-)	Green	
-	-	✓	✓	Pulse Output 2 (+)	PO2 (+)	White	Form A
-	-	✓	✓	Pulse Output 2 (-)	PO2 (-)	Black	
✓	✓	-	✓	Pulse Output 3 (+)	PO3 (+)	Red	Form B
✓	✓	-	✓	Pulse Output 3 (-)	PO3 (-)	Blue	
-	-	-	-	Ground	(GROUND)	Bare wire	-

10 MeterWare Software Information

The Dresser MeterWare software can be installed on your computer to configure the meter, download its logged data, and update the meter's firmware. An infrared cable using the IrDA protocol enables the MeterWare software to communicate with the meter (refer to Appendix A).

For more information about the installation and operation of the MeterWare software, refer to the *Dresser MeterWare Software Manual*.

11 Meter Maintenance

Perform the following steps as needed to help keep your meter functioning properly.

11.1 Meter Lubrication

No lubrication is required. This meter incorporates permanently lubricated bearings and gears.

11.2 Meter Leveling

Because the meter is supported entirely by the gas pipeline, movement of the piping due to accident, settling of the ground, or other causes can impede meter operation and accuracy.

Ensure the meter remains level within 1/16 inch per foot (5 mm/m) in any direction, side to side, and front to back.

11.3 Meter and Digital Index Cleaning

Clean the exterior of the meter and the digital index housing with isopropyl alcohol.

If there is any evidence of dirt or dust in the meter body, perform the following steps:

1. Windmill the impellers (at a speed less than maximum capacity) by injecting controlled compressed air from a nozzle into the meter inlet.
2. While the impellers are turning, flush approximately five (5) ounces (150 ml) of an approved safe solvent through the meter.
3. Use compressed air to completely dry the meter.

11.4 Removing the Meter from Service



WARNING

If for any reason the meter must be removed from service after pressurizing the meter, strictly adhere to safety precautions in accordance with established company and/or regulatory guidelines and procedures.

Before working on the meter, slowly depressurize and vent all pressure from the meter. Release pressure at a rate less than five (5) psig/second (35 kPa/second).

12 Troubleshooting

Problem	Item	Possible Cause	Suggested Action
No flow registered	1	Obstruction in piping or meter	Check piping and valves to ensure there is an open flow path.
	2	Obstruction in screen or strainer	Clean screen or strainer.
	3	Digital index flow value not updating	No gas flow. Open valve or remove obstruction; refer to Item 1.
Low volume registration	4	Meter oversized for load	Use proper meter size.
	5	Leak at meter bypass	Check bypass and valves.
	6	Meter internal friction	Refer to “High differential” problem causes and actions.
High differential	7	Build-up of deposits	Clean meter; refer to Section 11.3.
	8	Worn bearings or sleeves	Replace or return to Dresser Product Service Department.
	9	Impellers rubbing headplates; meter out of time	<ul style="list-style-type: none"> • Rotate impellers manually to check for binding or rubbing. • Remove obstructions; refer to Item 1. • Time meter. • Check the meter level.
Vibration or noise	10	Misalignment of piping or strain	<ul style="list-style-type: none"> • Remove piping strain. • Level meter.
	11	Impellers rubbing casing	Refer to Items 7 and 8.
	12	Contaminants in measuring chamber	Clean meter; refer to Section 11.3.

13 Specifications

Table 4: Meter Specifications

Criteria	Specification
Model number	10C25 Meter
Physical	
Overall Dimensions	Side Inlet Orientation: 9.04" (L) x 6.625" (W) x 5.03" (H) Top Inlet Orientation: 9.04" (L) x 5.71" (W) x 6.70" (H)
Carton Dimensions	11-1/16 x 9-1/8 x 13-1/8
Net Weight/ Shipping Weight	9.5 lb/11 lb
Connections	30 LT/45 LT/#3, #4 Sprague, 1-1/2" FNPT
Maximum Allowable Operating Pressure (MAOP)	25 psig
Operating Temperature Range	-40°F to 140°F (-40°C to 60°C)
Gas Application	Clean, non-corrosive dry gas
Display	
Display Type	LCD with 10 mm digits
Capacity Registration	5, 6, 7, or 8 digits
Screens	20 (user selectable)
Screen Scrolling	Magnetic switch
Temperature Measurement System (Electronic Index)	
Type	Extremely Stable Class A, PT 1000 RTD
Range	-40°F to 140°F (-40°C to 60°C)
Total Ambient Temperature Effect	Less than 0.1°F (0.05°C) over entire temperature range
Pressure Compensation	Programmable Fixed Factor

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Criteria	Specification
Computational Accuracy	
Computation	+/- 0.25% of compensated volume reading
Data Logging	
Data Logged	150 days of hourly logs
Logged Data	<ul style="list-style-type: none"> • Time Stamp • Compensated Volume • Non-Compensated Volume • Line Temperature • Battery Voltage • Faults • Alarms
Audit Trail	<ul style="list-style-type: none"> • Parameter • Time Stamp • Old Value • New Value
Data Exportable	Microsoft Excel
Power	
Battery Pack	Lithium Thionyl Chloride Pack with protective circuitry
Voltage Range	3.0 to 3.7 V DC
Nominal Battery Life	20 years
Battery Access	Field replaceable
Battery Life Remaining Indicated	In months
Information Retention	Flash memory for permanent information retention without power
Testing Proof Verification	
Compatibility	<ul style="list-style-type: none"> • Most sonic nozzles provers that use IrDA • Pulse output • Black and White flag

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Criteria	Specification
Model 5 Compatibility	<ul style="list-style-type: none"> • IrDA interface • Prover interface box • Black and White flag • Two (2) minute proving time
Flow Detection	White Flow Indicator
Uncorrected Prover Testing	White flow indicator on most provers
Communication	
Optical Reading Port Requirements	<ul style="list-style-type: none"> • Optical probe • Dresser MeterWare software (data downloads, programming, firmware upgrades)
Pulse Type	Two (2) user-selectable Form A Outputs
Output Representation	<ul style="list-style-type: none"> • Compensated • Non-compensated • Fault • Disabled
Pulse Rate	User scalable: x 1, x 10, x 100, or x 1000 cu. ft
Pulse Duration	User scalable: 50, 150, or 250 ms
AMR Type	Any Form A pulse collector
Dedicated Fault Output	Form B (500 ms pulse duration)
Isolated Outputs?	Yes
Maximum Input Voltage	8.2V
Flow Selection	
Flow Direction	Forward, Reverse, Forward-Reverse, Reverse-Forward, Forward+Reverse
Alarms	
Alarm Notifications	<ul style="list-style-type: none"> • High/low temperature • High flow • Low battery

Criteria	Specification
Fault	
Fault Conditions	<ul style="list-style-type: none">• Temperature• Volume• Low battery• Internal operation
Regulatory Standards	
Regulatory Standards	<ul style="list-style-type: none">• ANSI, B109.3, LMB-EG-09E• OIML, MID, EN1359• EN 60529 for degrees of protection• EN 61000-6.1, 2, 3, 4• UN 38.3• 060247-001 certificate of compliance
Safety Approvals	<ul style="list-style-type: none">• CSA C22.2 No. 213 Class 1 Div 1 Group A, B, C, D• T3C
Dust/Moisture Ingress Protection	IP66 to IP68 dependent upon connector configurations

Table 5: Temperature Reading Accuracy

Temperature Reading Accuracy
-40°F to 140°F: +/- 0.9°F (-40°C to 60°C: +/- 0.5°C)

14 Warranty

Contact the Factory for the latest revision of Terms and Conditions for Sale of Products and Services. For more information, refer to Section 4.

Appendix A Connecting with MeterWare

Perform the following steps to connect the meter to a computer to communicate with the MeterWare software. For more information, refer to the *Dresser MeterWare Software Manual*.

A.1 Required Equipment

The following equipment is needed to perform the steps in this section. Contact Customer Service to request these parts or assistance.

- Dresser MeterWare software installed
- Dresser™ Communications Kit, which includes the parts listed in Table 6

Table 6: Communications Kit Contents

Item	Part	Purpose
1	USB extension cable	Connects the IR dongle USB connector to the computer's USB port
2	Magnet	Initializes and scrolls through LCD screens on the unit
3	IR dongle (with USB connection)	Communicates with the IR window on the unit
4	IrDA cable holder	Aligns the IrDA device with the unit's IR window and holds it in place

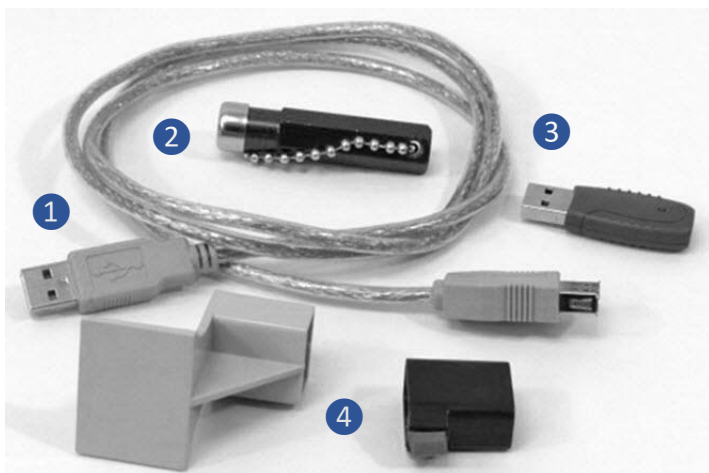


Figure 17: Communications Kit



Note: The package or appearance of the items may differ from the ones shown in Figure 17.

For more information, refer to the *Dresser MeterWare Software Manual*.

A.2 Attaching the IrDA Cable

Perform the following steps to connect the IrDA data cable to enable communication with the meter:



Note: In this manual, the IrDA cable refers to the IR dongle attached to the USB extension cable.

1. Plug the USB extension cable connector into the computer's USB port.
1. Plug the wide end of the USB extension cable onto the IR dongle.
2. Insert the correct IrDA cable holder into the cable holder slot on the meter.

3. Insert the IR dongle into the IrDA cable holder to align it with the IR window on the meter (refer to the following figures).

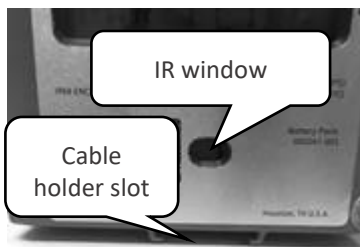


Figure 18: Location for holder installation

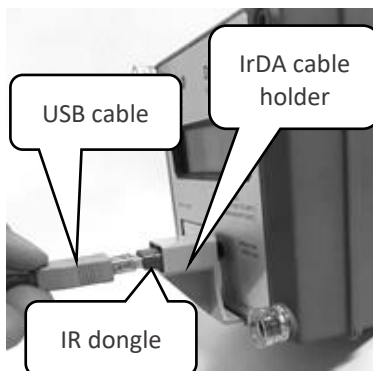



Figure 19: Proper installation of the IrDA cable

A.3 Establish Connection with MeterWare

Perform the following steps to be able to transmit information between the Dresser MeterWare software and the meter:

1. Connect the IrDA cable from the computer to the meter (refer to Section A.1).
2. Start the MeterWare software by double-clicking the Dresser MeterWare icon ().

3. On the **Welcome** screen, note the revision number and release date of the MeterWare software.

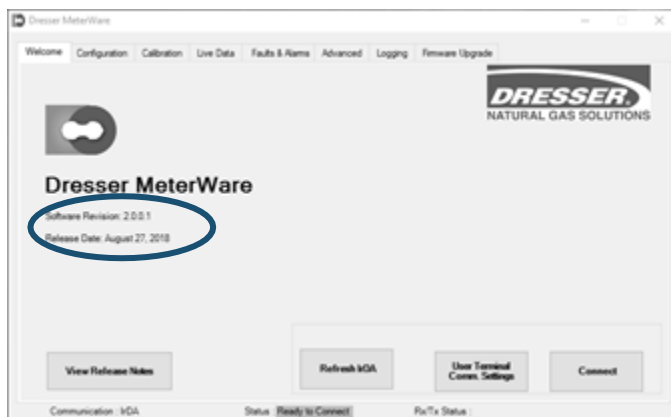


Figure 20: Welcome screen – verify software revision

4. If needed, wake up the meter by swiping the magnet vertically across the black dot by the LCD screen (refer to Figure 2).
5. Observe the **Status** area at the bottom of the screen as the MeterWare software finds the meter.

The text changes from **Searching** to **In Range** in yellow, and then changes to **Ready to Connect** in green when it is successful.

If it cannot connect, verify that the IrDA cable is properly connected and positioned.

6. Click **Connect**.

A green progress bar displays during the process.

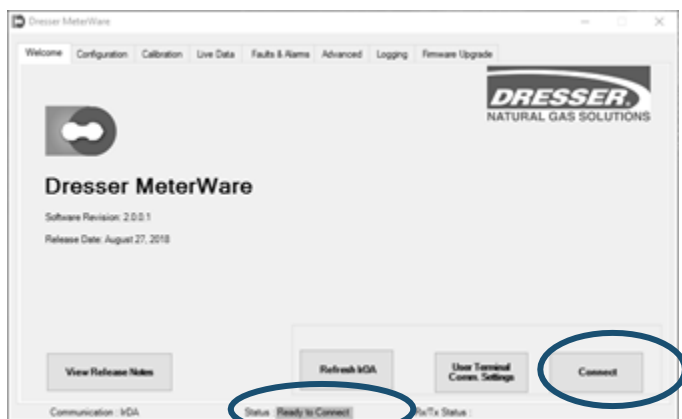


Figure 21: Welcome screen – ready to connect

If connection to the meter is successful, a picture of the connected meter displays, and the **Status** area at the bottom of the screen displays **Connected**. The **Connect** button changes to **Disconnect**.



Figure 22: Connection is successful

Meter serial number: _____

Digital index serial number: _____

Meter badge number: _____

Notes

