

INSTRUCTIONS

Refrigeration
Service Products
and Components



Instruction manual for the 2-way digital manifold

DIGIMON



Important

- ⚠ Read this manual carefully and become familiar with the specifications and operation of the REFCO DIGIMON digital manifold prior to use. The instructions will give you important information in regards to the operation and service of the manifold.

Purpose and use

The manifold has been designed specifically to measure pressure and temperature in refrigeration equipment. The manifold may only be used by trained technicians.

- ⚠ The manifold **must not be used** for other than refrigerant applications. The manifold is not suitable for other liquids or gases except those indicated on the display.
- ⚠ The manifold **must not be used** with pressure higher than 55bar / 800psi / 5500kPa / 5.5MPa.
- ⚠ The manifold **can not be used** as a pressure regulator.
- ⚠ The manifold **can not be used** with ammonia (NH₃ / R717) and carbon dioxide (CO₂ / R744)
- ⚠ Safety glasses and gloves **must be worn** during the use of the manifold.

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Extent of delivery

Details about the variations and contents of the DIGIMON manifold are described in the REFCO catalog / flyer.

Storage

DIGIMON is a precision measuring instrument. After use store the manifold in a protected environment.

Technical description

DIGIMON can be used with the following refrigerants:

R11, R113, R114, R12, R123, R124, R13, R134a, R13B, R22, R227, R23, R290, R401A(Liq), R401A(Vap), R401B(Liq), R401B(Vap), R402A(Liq), R402A(Vap), R402B(Liq), R402B(Vap), R403B(Liq), R403B(Vap), R404A, R406A (Liq), R406A(Vap), R407A, R407C(Liq), R407C(Vap), R408A(Liq), R408A(Vap), R409A(Liq), R409A(Vap), R410A, R413A(Liq), R413A(Vap), R414B, R416A, R417A(Liq), R417A(Vap), R420A, R422A(Liq), R422A(Vap), R500, R502, R503, R507, R508A, R508B, R600a

Liq = Liquid, Vap = Vapor

Maximum working pressure:	Low side 34bar / 500psi / 3400kPa / 3.4MPa High side 55bar / 800psi / 5500kPa / 5.5MPa
Pressure resolution:	0.01 bar / 0.5 psi / 0.001 MPa / 1 kPa
Pressure units:	bar / psi / kPa / MPa
Temperature resolution:	0.5°C / 0.1°F
Vacuum units:	mbar / Microns
Power supply:	Battery 9Vdc (6F22)

Key function

ON / OFF

VAC

LIGHT

R+

R-

SUPERHEAT/SUBCOOL

ENTER

Power ON / OFF
Vacuum measuring
LCD back light
(switches itself off after 30 sec)
Refrigerant selection up
Refrigerant selection down
Measuring of the Superheat and
Subcool temperature
Enter key function

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Application

Preparation

1. Install the battery by removing the battery cover from the rear of the manifold.
2. Switch on the unit by pressing the **ON/OFF** button for 1 second.
3. Check the battery indicator on the display.

Calibration

1. Press **LIGHT** and **ENTER** button at the same time for at least 6 seconds. Release the buttons when "Zero" is shown on the display.
2. Press the **ENTER** button. All input and data - apart from the refrigerant and temperature – get reset. The display shows now the "normal" indications again.

Selection of the refrigerant

The refrigerant can be selected by pressing **R+** or **R-**. The letter R on the top of the display is flashing during the selection. When the selected refrigerant is displayed press the **ENTER** button. The letter "R" on the top will stop flashing immediately.

Pressure unit

Hold the **ENTER** button and press the **R+** button to select the pressure unit among bar / psi / kPa / MPa.

Temperature unit

Hold the **ENTER** button and press the **R-** button to select the desired temperature unit °C / °F.

Vacuum mode

Press the **VAC** button to measure the vacuum. Press the **VAC** button again to quit this function.

Vacuum unit

Hold the **ENTER** button and press the **VAC** (vacuum) button to select the unit measure to either "mbar" or "Microns".

Unit memory

The chosen units will be stored until to the next manual change.

Back light function

Press the **LIGHT** button and the back light will switch on for approximately 30 seconds.

Superheat and Subcool function

SUPERHEAT/SUBCOOL shows the difference between the stored data of chosen refrigerant and the measured temperature of the external sensor (6).

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Connecting the manifold to a system

- Connect blue hose (1) → compound side of system
- Connect red hose (2) → pressure side of system
- Connect yellow hose (5) → vacuum pump
- Close both valves (3+4)

Evacuation

- Choose vacuum mode on digital manifold
- Switch on the vacuum pump
- Open both valves (3+4)
- Check pressure on vacuum display
- When the expected vacuum is reached close both valves (3+4)

Please note:

The evacuation time may vary depending on the size of a system. A minimal time of 20 minutes must be observed to evacuate a small to middle sized system.

Charging a system after evacuation

- Keep all valves closed (3+4).
- Disconnect the yellow hose from the vacuum pump and connect this hose to the refrigerant gas cylinder.
- Open valve from refrigerant gas cylinder.
- Open blue valve (compound side). The system is now being charged with refrigerant. Check the correct quantity of refrigerant with a charging scale (REF-METER from REFCO) and observe the pressure on the compound side.
- When the correct filling quantity has been reached close all valves.
- After the charging process check the pressure on the high pressure and compound side of the unit.
- Disconnect all hoses from the system.
- Open valves (3+4).

Measuring by using the Superheat-Subcool function

- See "connecting the manifold to a system."
- Plug in the external temperature sensor (6) into the DIGIMON. (Jack on the left hand side of the shell.)
- Install temperature probe of the external sensor (6) on the liquid or suction line.
- Choose the applicable refrigerant. (See "Selection of the refrigerant.")
- Activating display of temperature difference: Press **SUPERHEAT/SUBCOOL**.
- Switch between superheat/subcool (liquid/suction line): Hold **ENTER** and press **SUPERHEAT/SUBCOOL**.

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Service of manifold

- The charging hoses must be checked and free of oil residue before each use. A visible inspection is also necessary to ensure that the hoses and the connection are undamaged and tight.
- The seals and gaskets of the manifold are parts of use and must be replaced from time to time. The manifold is to be tested regularly to ensure the valves are still tight.
- If a manifold shows to be leaking the pistons of the valves can easily be replaced and are available as a spare part. Please refer to the manifold accessory section of the REFCO catalog.
- If the sight glass is leaking a replacement kit is available. To change the sight glass a special tool is necessary (M4-6-11-T) which is available from REFCO. Replace and tighten the new sight glass carefully in order to prevent damage to the glass.
- After installing spare parts to the manifold it is necessary to test the manifold for leaks before the next use.

Auto shut-off

Approximately 10 minutes after the last measurement or keypress the DIGIMON shuts off itself.

Disposal of manifold

Dispose of the manifold according to the rules and regulations of the country of use.

Spare parts for DIGIMON manifold

Description	Designation	Part number
Handwheel red	M2-7-SET-R	4677826
Handwheel blue	M2-7-SET-B	4677834
Complete valve set	M2-10-95-R/10	4662607
Piston incl. gaskets	M4-6-04-PA/10	4662624
Sight glass set	M4-6-11	4493169
External temperature sensor	DIGIMON-EXTERNAL-SENSOR	4677647
Battery compartment cover	DIGIMON-BATTERY-COVER	4676374
Tool for sight glass	M4-6-11-T	4493169
Tool for valve core	A-32000	9880890
Plastic case	DIGIMON-CASE	4676497

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