



LEAK AND FLOW TESTING SOLUTIONS

Provaset T3LP

EQUIPMENT FOR LEAK TESTS
BY ABSOLUTE PRESSURE DECAY
MEASUREMENT

INNOVATIVE
FULLY INTERFACEABLE
COLOUR GRAPHIC DISPLAY
TOUCH SCREEN



- Leak test with full scale up to 30 bar and in vacuum
- Resolution up to 0.1 Pa (0.001 mbar)
- 7" colour LCD with touchscreen
- 300 test programs
- 300 test sequences
- Electronic pressure regulation
- Digital I/O interfaces for PLCs, RS232/RS485 serial lines, USB for PC and Ethernet



Per maggiori informazioni:
www.tecnasrl.com/prodotti/t3p



Tests

TL3P is an innovative device for leak tests by absolute pressure decay measurement.

The touch interface, with the color display and the testing real-time view, make the programming and use simple and immediate.

Its high measurement resolution and test accuracy, together with the electronic regulation of the filling pressure, allow to perform not only leak tests but also destructive burst test, safety valves opening checks, volumetric control, obstruction tests and "in bell" tests on sealed products or by interception method.

The control of external automations, the interface with barcode, Qrcode readers and printers and the possibility to record the tests on USB memories or via Ethernet make it a complete and suitable instrument for the most modern production applications.

Provaset T3LP

SPECIFICATIONS

| | |
|-------------------------|--|
| Power supply | External 24 Vdc; alternatively 85÷264 Vac, 35W |
| Compressed air line | Dry, non-condensing, 5-micron filtered and oil-free air, compliant with ISO8573-1 |
| Sensor calibration | Software-guided procedure with primary instruments. |
| A/D converter | 24 bits |
| Pressure Regulator | Electronic, with dedicated pressure transducer to visualize the regulated pressure on the display |
| Keyboard | Resistive touch screen |
| Display | 7" colour TFT LCD display with touchscreen |
| Indicators | 4 LED lights (testing phases, pass/reject outcome) |
| Test counter | Passed and Rejected totals, resettable to zero Statistic option: mean value, minimum, maximum, standard deviation, normal distribution, CP, CPK, hour production totals |
| Audible alarm | Built-in beeper with programmable duration |
| Clock | Date and time, with supercap, max autonomy 7 days |
| Programmable parameters | 300 testing tables with sequential mode, general parameters, volume calculation to indicate the leak rate in cm ³ /min or cm ³ /h |
| PLC connections | 8 photocoupled inputs and 8 photocoupled outputs Each I/O is fully programmable Control of external automation (coupling, security cage...) without PLC |
| Data interfaces | Configurable RS232/RS485 serial lines USB device interface and Ethernet Protocols: Modbus RTU, CSV ASCII output, barcode, Qrcode, printer |
| Staubli® Connector | Standard, for Leak Masters |
| Housing | Unpainted anodized aluminium |

Calibration service

Each equipment is accompanied by a calibration report released by Tecna srl. According to the requirements of ISO9001 standard, calibration must be verified at specified intervals against national or international test masters. Tecna srl, through its specialized personnel and certified instruments, offers a complete scheduled calibration service.

OPTIONS

- Double channel circuit
- Setup for vacuum test
- 2 programmable pneumatic outputs for external commands (plug/marker)
- I/O expansion: adds digital PLC inputs/outputs (8+8) and a RS232/RS485 serial line
- Additional USB, Ethernet, ProfIBUS or CANbus interfaces for remote control and data collection
- Real time SPC statistical analysis
- Software to manage a label printer and a barcode or Qrcode reader

ACCESSORIES

- Air filters
- Certificated Leak Master to be inserted in the Staubli® connector
- Holders for burst test
- Barcode, Qrcode reader and printer
- Remote control keypad
- 3-colours indicator light with loud sound alert
- External valve for volume check and tests in sealed "bell"

CUSTOMIZED PROGRAMS FOR PC/HMI TERMINAL

- Software to collect and manage the data of the tests
- Parameter programming and SPC analysis of test data
- Virtual Instrument for National Instruments LabVIEW™ available at request

ABSOLUTE PRESSURE DECAY

The testing cycle is based on the pressure decay measured inside of the component being tested, which must be below the set limit to pass the test.

For tests on sealed products or strength tests (burst tests) you can set up customized testing cycles. Furthermore, if the electronic pressure adjustment is available, you can set up customized filling ramps.

OPERATING PRINCIPLE

FILLING (time T1):

the product, that has to be tested, is filled at the programmed nominal test pressure.

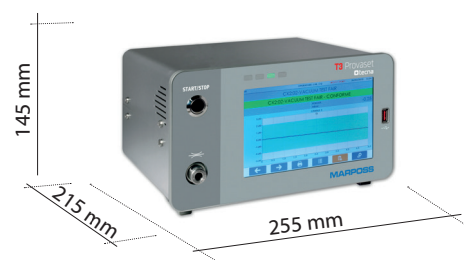
SETTLING (time T2):

this phase is necessary for the settlement of the pressure inside the product being tested.

LEAK MEASUREMENT (time T3):

the pressure decay in the product being tested is measured. The leak can be expressed as ΔP or calculated in cm³/min or cm³/h.

DIMENSIONS



Distributed by:

Provaset T3LD

EQUIPMENT FOR LEAK TESTS
BY DIFFERENTIAL METHOD

HIGH PERFORMANCE
FULLY INTERFACEABLE
COLOUR GRAPHIC DISPLAY
TOUCH SCREEN



- Leak tests with full scale up to 30 bar and in vacuum
- Resolution of 0.1 Pa (0.001 mbar)
- 7" colour LCD display with touchscreen
- 300 test programs
- 300 test sequences
- Electronic pressure regulator
- Digital I/O interfaces for PLCs, RS232/RS485 serial lines, USB for PC and Ethernet



Further information at:
www.tecnasrl.com/products/t3d



Tests

T3LD is an innovative device for leak tests by pressure differential method. By measuring the pressure difference between the product being tested and a reference sample, the test times are reduced and the sensitivity is heightened.

The touch interface, with a colour display and the real-time visualization of the tests, makes the programming and the use simple

and immediate. Its high measurement resolution and the test accuracy, in combination with the electronic regulation of the filling pressure, allow to perform not only leak tests but also destructive burst tests, safety valves opening checks, volumetric control, obstruction tests and "in bell" tests on sealed products or by interception method.

The control of external automations, the interface with barcode, Qrcode readers and printers and the possibility to record the tests on USB memories or via Ethernet, make it a complete and suitable instrument for the most modern production applications.

Provaset T3LD

SPECIFICATIONS

| | |
|-------------------------|---|
| Power Supply | External 24 Vdc; alternatively 85÷264 Vac, 35W |
| Compressed Air Line | Dry, non-condensing, 5-micron filtered and oil-free air, compliant with ISO8573-1 |
| Sensor Calibration | Software-guided procedure with sample instruments. |
| A/D Converter | 24 bits |
| Pressure Regulator | Electronic, with dedicated pressure transducer to visualize the regulated pressure on the display |
| Keyboard | Resistive touch screen |
| Display | 7" colour TFT LCD display with touchscreen |
| Indicators | 4 LED lights (testing phases, pass/reject outcome) |
| Test counter | Passed and Rejected totals, resettable to zero Statistic option: mean value, minimum, maximum, standard deviation, normal distribution, CP, CPK, hour production totals |
| Audible alarm | Built-in beeper with programmable duration |
| Clock | Date and time, with supercap, max autonomy 7 days |
| Programmable parameters | 300 testing tables with sequential mode, general parameters, volume calculation to indicate the leak rate in cm ³ /min or cm ³ /h |
| PLC connections | 8 photocoupled inputs and 8 photocoupled outputs Each I/O is fully programmable; the control is possible of external automation (coupling, security cage...) without PLC |
| Data interfaces | Configurable RS232/RS485 serial line USB device interface and Ethernet Protocols: Modbus RTU, CSV ASCII output, barcode, Qrcode, printer |
| Staubli® Connector | Standard, for Leak Masters |
| Housing | Unpainted anodized aluminium |

Calibration service

Each equipment is accompanied by a calibration report released by Tecna srl. According to the requirements of ISO9001 standard, calibration must be verified at specified intervals against national or international test masters. Tecna srl, through its specialized personnel and certified instruments, offers a complete scheduled calibration service.

OPTIONS

- Setup for vacuum test
- 2 programmable pneumatic outputs for external commands (plug/marker)
- I/O expansion: adds digital PLC inputs/outputs (8+8) and a RS232/RS485 serial line
- Additional USB, Ethernet, ProfIBUS or CANbus interfaces for remote control and data collection
- Real time SPC statistical analysis
- Software to manage a label printer and a barcode or Qrcode reader

ACCESSORIES

- Air filters
- Certificated Leak Master to be inserted in the Staubli® connector
- Barcode, Qrcode and printer
- Remote control keypad
- 3-colours indicator light with loud sound alert
- External valve for volume check and tests in sealed "bell"



CUSTOMIZED PROGRAMS FOR PC/HMI TERMINAL

- Software to collect and manage the data of the tests
- Parameter programming and SPC analysis of test data
- Virtual Instrument for National Instruments LabVIEW™ available at request

DIFFERENTIAL PRESSURE DECAY

The testing cycle is based on a comparison between the product being tested and a reference volume. In this way, the effects of the pressure settlement inside the tested product are reduced and the accuracy in detecting a leak rate is increased, achieving excellent results in a quicker interval.

OPERATING PRINCIPLE

Test cycle mainly consists of three phases:

FILLING (time T1):

the product being tested and the reference volume are both filled to the programmed rated test pressure.

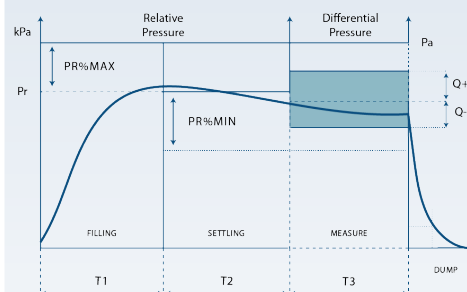
SETTLING (time T2):

this phase is necessary for the settlement of the pressure inside the product being tested.

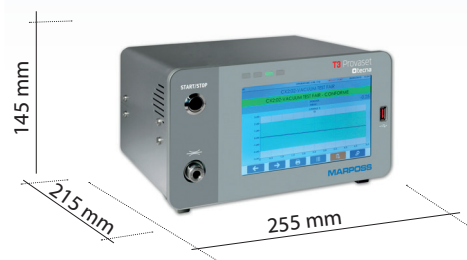
LEAK MEASUREMENT (time T3):

the pressure differential between the product being tested and the reference volume is measured.

The leak can be expressed as ΔP or calculated in cm³/min or cm³/h.



DIMENSIONI



Distribuito da / Distributed by:

Provaset T3LPF

INSTRUMENT FOR FLOW TEST WITH MASS FLOW SENSOR AND FOR LEAK TEST WITH ABSOLUTE PRESSURE DECAY MEASUREMENT



INNOVATIVE FULLY INTERFACEABLE COLOUR GRAPHIC DISPLAY TOUCH SCREEN

- Fast test of filters, valves, cooktops, exhaust manifolds ...
- Flow measurement with mass sensor: ranges up 300 l/min resolution up to 0.01 cm³/min
- Leak test with measure of pressure decay: full scale range up to 6 bar resolution up to 0.1 Pa
- 300 test programs
- 300 test sequences
- Digital I/O interfaces
- USB, RS232/RS485 serial lines for PC and Ethernet



Further information at:
www.tecnasrl.com/products/t3pf



Tests

Provaset T3LPF is an electro-pneumatic instrument, designed for air flow tests at a programmed pressure, controlled by an electronic pressure regulator.

In addition to flow tests the instrument is able to perform also leak tests with absolute pressure decay measurement.

The touch interface, with colour display and real-time view of testing, make programming and use simple and immediate.

Provaset T3LPF is suitable for use in all industrial segments, on testing benches, production lines or fully automatic systems.

The control of external automations, the interface with barcode, Qrcode readers and printers and the possibility to record the tests on USB memories or via Ethernet make it a complete and suitable instrument for the most modern production methods.

Provaset T3LPF

Rev. 01/21

SPECIFICATIONS

| | |
|-------------------------|--|
| Power supply | External 24 Vdc; alternatively 85÷264 Vac, 35W |
| Compressed air line | Dry, non-condensing, 5-micron filtered, and oil-free air, compliant with ISO8573-1. |
| A/D converters | 24 bits |
| Calibration | Calibration certificates for pressure and flow sensors Software-guided procedure with sample instruments. |
| Pressure regulator | Electronic, with dedicated pressure transducer to visualize the regulated pressure on the display |
| Keyboard | Resistive touch screen |
| Display | 7" colour TFT LCD display with touchscreen |
| Indicators | 4 LED lights (testing phases, pass/reject outcome) |
| Test counter | Pass and Reject totals, resettable to zero Statistic option: mean value, minimum, maximum, standard deviation, normal distribution, CP, CPK, hour production totals |
| Audible alarm | Built-in beeper with programmable duration |
| Clock | Date and time, with supercap, max autonomy 7 days |
| Programmable parameters | 300 testing tables with sequential mode, general parameters, volume calculation to indicate the leak rate in cm ³ /min or cm ³ /h |
| PLC connections | 8 photocoupled inputs and 8 photocoupled outputs Each I/O is fully programmable Control of external automation (coupling, security cage...) without PLC |
| Data interfaces | Configurable RS232/RS485 USB device interface and Ethernet Protocols: Modbus RTU, CSV ASCII output, barcode, Qrcode, printer |
| Staubli® Connector | Standard, for Leak Masters |
| Housing | Unpainted anodized aluminium, ABS |

Calibration service

Each equipment is accompanied by a calibration report released by Tecna srl. According to the requirements of ISO9001 standard, calibration must be verified at specified intervals against national or international test masters. Tecna srl, through its specialized personnel and certified instruments, offers a complete scheduled calibration service.

OPTIONS

- 2 programmable pneumatic outputs for external commands (plug/marker)
- Setup for vacuum test
- I/O expansion: adds digital PLC inputs/outputs (8+8) and a RS232/RS485 serial line
- Additional USB, Ethernet, ProfiBUS or CANbus interfaces for remote control and data collection
- Real time SPC statistical analysis
- Software for managing label printer, barcode and Qrcode readers

ACCESSORIES

- Air filters
- Certificated Leak Master to be inserted in the Staubli® connector
- Barcode, Qrcode readers and printer
- Remote control keypad
- 3-colours indicator light with loud sound alert



CUSTOMIZED PROGRAMS FOR PC/HMI TERMINAL

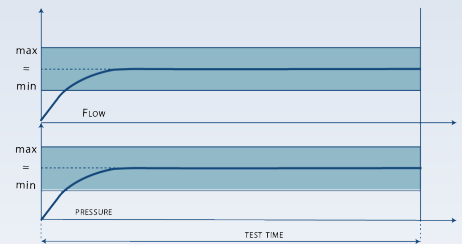
- Software to collect and manage the data of the tests
- Parameter programming and SPC analysis of test data
- Virtual Instrument for National Instruments LabVIEW™ available at request

PROVASET T3LPF is equipped with a pneumatic circuit that can perform both flow test and leak test, even in a programmed sequence.

DIRECT FLOW MEASUREMENT

The instrument directly controls and measures the pressure and flow rate of the product being tested (filters, valves, cooktops, exhaust manifolds ...).

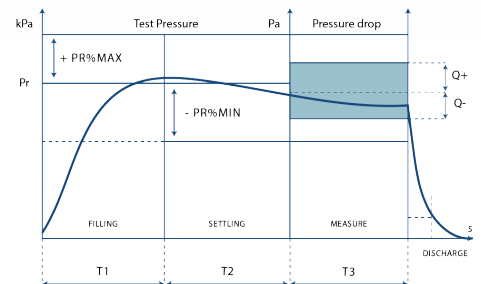
The test can be performed at constant flow.



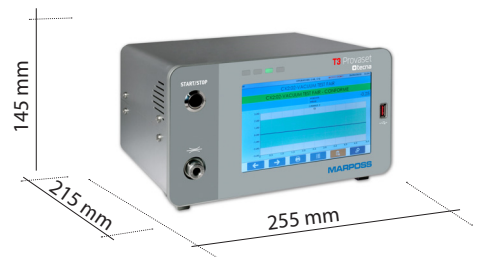
LEAK TEST WITH ABSOLUTE PRESSURE DECAY

The test cycle is based on the measuring of the pressure decay inside the component being tested, which must be below the set limit to pass the test.

With the electronic pressure regulator is possible to set up customized filling ramps.



DIMENSIONI



Distributed by:

Provaset T3LPQ

**INSTRUMENT FOR LEAK TESTS
WITH THE DIRECT MEASURE OF
THE LEAK FLOW RATE**



**INNOVATIVE
COLOUR GRAPHIC DISPLAY
TOUCH SCREEN
FULLY INTERFACEABLE**

- Fast test of filters, valves, taps, cooktops ...
- Leakage measure with mass flow sensor: fullscale ranges up to 100 cm³/min resolution up to 0.01 cm³/min
- 300 test programs
- 300 test sequences
- Digital I/O interfaces, RS232/RS485 serial lines, USB for PC and Ethernet



Further information at:
www.tecnasrl.com/products/t3pq



Tests

Provaset T3LPQ is an electro-pneumatic instrument, designed for testing air tightness by direct measurement of air leakage.

The balanced pressure method allows to obtain measurements that are independent from the tested volume and it offers the best stability and precision.

The touch interface, with a colour display and a real-time view of the tests makes the programming and the use simple and immediate.

PROVASET T3LPQ is suitable for all industrial segments, on testing benches, in production lines or in fully automated systems.

Finally, the control of external automations, the connection with barcode, Qrcode readers and printers and the possibility to record the tests on USB memories or via Ethernet make it a complete and suitable instrument for the most modern production methods.

Provaset T3LPQ

Rev. 03/19

SPECIFICATIONS

| | |
|-------------------------|--|
| Power supply | External 24 Vdc; alternatively 85÷264 Vac, 35W |
| Compressed air line | Dry, non-condensing, 5-micron filtered, and oil-free air, compliant with ISO8573-1. |
| A/D converters | 24 bits |
| Calibration | Calibration certificates for pressure and flow sensors Software-guided procedure with primary instruments. |
| Pressure regulator | Electronic, with dedicated pressure transducer to visualize the regulated pressure on the display |
| Keyboard | Resistive touch screen |
| Display | 7" colour TFT LCD display |
| Indicators | 4 LED lights (testing phases, passed/rejected result) |
| Test counter | Pass and Reject totals, resettable to zero Statistic option: mean value, minimum, maximum, standard deviation, normal distribution, CP, CPK, hour production totals |
| Audio alarm | Built-in beeper with programmable duration |
| Clock | Date and time, with supercap, max autonomy 7 days |
| Programmable parameters | 300 testing tables with sequential mode, general parameters, volume calculation to indicate the leak rate in cm^3/min or cm^3/h |
| PLC connections | 8 photocoupled inputs and 8 photocoupled outputs Each I/O is fully programmable Control of external automation (coupling, security cage...) without PLC |
| Data interfaces | Configurable serial lines RS232/RS485 Interface USB-B (device) and Ethernet Protocols: Modbus RTU, CSV ASCII output, barcode, Qrcode, printer |
| Staubli® Connector | Standard, for certificated Leak Master |
| Housing | Unpainted anodized aluminium |

Calibration service

Each equipment is accompanied by a calibration report released by Tecna srl. According to the requirements of ISO9001 standard, calibration must be verified at specified intervals against national or international test masters. Tecna srl, through its specialized personnel and certified instruments, offers a complete scheduled calibration service.

OPTIONS

- 2 programmable pneumatic outputs for external commands (plug/marker)
- I/O expansion: adds digital PLC inputs/outputs (8+8) and a RS232/RS485 serial line
- Additional USB, Ethernet, ProfiBUS or CANbus interfaces for remote control and data collection
- Real time SPC statistical analysis graphs
- Software for managing label printer, barcode or Qrcode reader

ACCESSORIES

- Air filters
- Certificated Leak Master to be inserted in the Staubli® connector
- Remote control keypad
- 3-colours indicator light with loud sound alert
- External valves for a quicker filling phase



CUSTOMIZED PROGRAMS FOR PC/HMI TERMINAL

- Software to collect and manage the data of the tests
- Parameter programming and SPC analysis of test data
- Virtual Instrument for National Instruments LabVIEW™ available at request

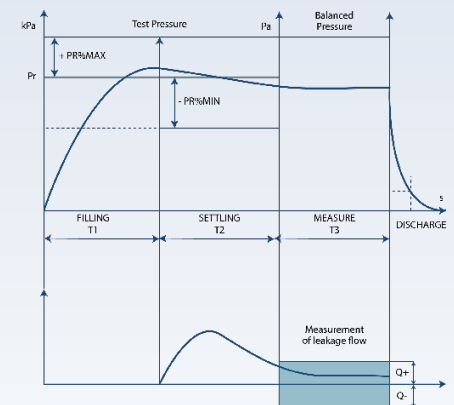
MEASURING THE LEAKAGE FLOW

At the end of the phases of filling and settling, the pressure is maintained constant by the internal electronic controller. The flow that originates therefore corresponds to the flow required to maintain the product under test at the programmed test pressure and thus corresponds to the leakage flow.

The leak is measured continuously allowing the operator to immediately execute processes of adjustment or repair.

This method is very effective and flexible and allows a significant reduction of the test time.

OPERATING PRINCIPLE



The test cycle could also be programmed to automatically start when product in test is connected to the instrument.

DIMENSIONI



Distributed by:

Provaset T2

EQUIPMENT FOR LEAK TESTS
BY ABSOLUTE PRESSURE DECAY



For further information
www.tecnasrl.com/products/T2



RELIABLE AND COMPACT
COLOUR GRAPHIC DISPLAY
TOUCH SCREEN

- Leak test with full scale up to 6 bar
- Resolution up to 1 Pa (0.01 mbar)
- 3.5" colour LCD display with touch screen
- Up to 100 test programs tables
- Digital I/O interface for PLCs, RS232/RS485 serial lines and USB for PC
- Test recording via Ethernet and USB

PROVASET T2 is a compact, versatile and extremely reliable instrument that applies the latest electronic and pneumatic technologies to offer the best performances.

The new Provaset T2 updates the previous Provaset 2P model, with which maintains the program and connection compatibilities. Provaset T2 is designed

for manual use on bench in limited areas but it could be integrated on automatic systems managed by PLC.

Provaset T2 is able to communicate through digital I/O, Ethernet, USB host/slave and RS232/RS485 serial line interfaces.

The test data collection is possible on USB memory and via Ethernet.

Provaset T2 is available with 2 bar or 6 bar full scale model, with 1 Pa resolution on leak reading.

A Staubli connector is available to connect a Leak Master.

The test pressure can be regulated with a manual precision pressure regulator; the pressure of regulation is shown on the display.

Tests

T2 PLUS

- Staubli connector on front panel
- Ethernet port to instrument management and data collect
- 100 test programs, statistics, calculation of the leak flow rate Q in cm^3/min or cm^3/h
- Automatic pendrive data collection (through USB host)

OPTIONAL ACCESSORIES

- Air filters
- Certificated Leak Master to be inserted in the Staubli® connector
- Remote control keypad

Provaset T2

SPECIFICATIONS

| | |
|-------------------------|--|
| Power supply | 100÷240 Vac; 50÷60 Hz; 15W; Option: 24 Vcc, 15W |
| Compressed air line | Dry, non-condensing, 5-micron filtered and oil-free air, compliant with ISO8573-1, 6x4 mm hose fitting |
| Test pressure | Measurement area: 0÷2 bar, resolution 1 Pa; 0÷6 bar, resolution 1 Pa Accuracy: +/- 0.5% FS |
| Pressure drop | Accuracy: +/- 1%; read value +/- 1 Pa |
| Keyboard | LCD display with touch screen Manual Start/Stop button |
| Display | 3.5" colour TFT LCD display with touch screen |
| Indicators | "Passed" result led, "Failed" result led |
| Test counter | PASSED and FAILED totals, resettable to zero |
| Audio alert | Built-in beeper |
| Clock | Date and time |
| Programmable parameters | Up to 100 test programs |
| PLC connections | 4 photocoupled inputs and 4 photocoupled outputs |
| Data interfaces | Configurable RS232/RS485 serial lines USB slave, USB Host, Ethernet (option) Protocols: Modbus and CVS |
| Staubli® Connector | For Leak Master (option) |

Calibration service

Each equipment is accompanied by a calibration report released by Tecna srl. According to the requirements of ISO9001 standard, calibration must be verified at specified intervals against national or international test masters. Tecna srl, through its specialized personnel and certified instruments, offers a complete scheduled calibration service.

T2 EP option for obstruction test in continuous

The equipment works into a continuous mode, checking whether each small tube under test is free of occlusions.

The test starts immediately and automatically after the tube is easily inserted by the operator into the test port.

The operator won't have to press any button to start the measurement.

Each tube is tested independently, T2- EP gives the result on the screen up to the tube is finally removed by the operator.

Thanks to the green and red leds on the equipment and on the screen, and an audible alarm, the operator has an immediate PASSED or FAILED result and can verify that the tube under test has no obstructions.

Each result is available up to the tube is removed from the equipment test port.

AV10 - PNEUMATIC MODULE WITH AUTOMATIC START AND RELEASE FOR BLOOD LINES LEAK TESTING

The AV10 pneumatic module is supplied as an external accessory to be connected to air leak testing equipment.

Designed for blood lines leak testing in air, this version is equipped with a mechanism that automatically starts (start at the leak tester) the test when the operator connects the blood line, and automatically releases it at the end of the test if the test result is positive (good piece). The AV10 module can be used as a pneumatic connection interface between Tecna testing equipment and blood lines.

The internal valves of the AV10 module are used to advance or retract the release mechanism and are electrically controlled from the test equipment.

ABSOLUTE PRESSURE DECAY

The testing cycle is based on the pressure decay measured inside of the component being tested, which must be below the set limit to pass the test.

OPERATING PRINCIPLE

The testing cycle consists of three phases:

FILLING (time T1):

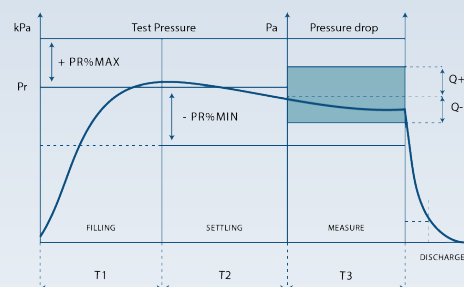
the product being tested is filled to the programmed rated test pressure.

SETTLING (time T2):

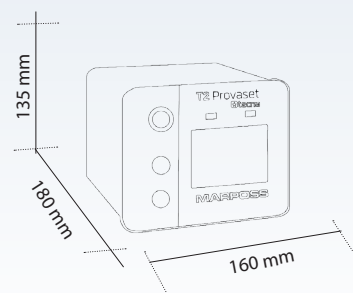
the equipment waits for the pressure to settle in the product being tested.

LEAK MEASUREMENT (time T3):

the pressure decay in the product being tested is measured.



DIMENSIONS



Distributed by:

Delta TM3F

PNEUMATIC MODULE WITH DIRECT FLOW MEASUREMENT FOR LEAK OR FLOW RATE TESTING

**MINIMAL SIZE
HIGH PERFORMANCE
COMPATIBLE WITH ALL PLCS
DESIGNED FOR MULTIPLE TESTING STATIONS**



- Flow tests from 25 cm³/min up to 160 l/min
- Resolution up to 0.01 cm³/min
- Full scale pressure: from 500 mbar up to 10 bar
- Resolution up to 0.1 Pa
- Extremely quick testing (applications with test time < 1 second)
- Reliable pneumatic circuit, complete with valves and transducers for pressure and flow
- Easy installation
- Digital interface for PLC
- RS485/USB communication interfaces
- Up to 300 test tables



Further information:
www.tecnasrl.com/products/tm3f



Tests

TM3PF Measurements of pressure and flow in air

The instrument directly measures pressure and flow rate through the product being tested (filters, taps, valves, ...). For leak or flow rate tests on small volumes, testing times below 1 second can be reached. Dislocated pressure reading on the tested product is available.

TM3PF-CV Measurements of pressure and flow in air for Check Valves

The instrument measures the peak pressure reached before the opening of the valve and also the pressure and the residual flow when the valve opens. Before the test starts, the testing module checks the initial conditions of pressure and free output flow. Customized test cycles are available.

TM3PQ Leak tests with direct measure of the flow rate

By using an internal volume, the instrument can measure the leak rate and also control the volume of the tested product.

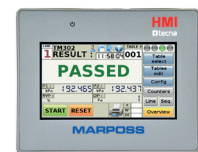


SOFTWARE MANAGER for TM3 modules management, data storage and statistical process control (SPC)

DELTA TM3F can be interfaced with:



Traditional PLC systems



Generic HMI viewers with dedicated software to manage TM3 test modules



TM3F is entirely designed and manufactured in Italy. Our products guarantee an excellent quality and the best value for money.

SPECIFICATIONS

| | |
|-------------------------|--|
| Power Supply | 24 Vdc - 1 A max |
| Compressed Air Line | Dry, non-condensing, 5-micron filtered and oil-free air, compliant with ISO8573-1; hose fittings 4x2.5/ 6x4 / 8x6 mm Supply pressure compatible with the instrument's full scale pressure |
| Sensor Calibration | Remote control software procedure with external masters |
| A/D Converter | 24 bits |
| Pressure Regulator | External (option) |
| Indicators | 4 LEDs: 2 yellow (test phases), green (passed), red (failed) |
| Test Counter | PASSED and FAILED totals, resettable to zero |
| Clock | Date and time, with supercap, 7 days back up max |
| Programmable Parameters | up to 300 testing tables, general testing parameters |
| PLC Connections | 2 photocoupled inputs: START / RESET 4 photocoupled outputs: TEST RUNNING, PASSED, FAILED, ALARM |
| Data Interfaces | RS485/USB communication interfaces with Modbus protocol RS232 interface to drive an external electronic pressure regulator |
| Staubli® Connector | Available on external connection for leak masters (option) |
| Housing | Unpainted aluminium |

Calibration service

Each equipment is accompanied by a calibration report released by Tecna srl. According to the requirements of ISO9001 standard, calibration must be verified at specified intervals against national or international test masters. Tecna srl, through its own specialized personnel and certified instruments, offers a complete scheduled calibration service.

ACCESSORIES:

- Pressure regulators
- External module for vacuum generation
- 3-colours indicator light with loud sound alert
- Air filters
- Fixing brackets
- Staubli® connector assembled on a T fitting to join a Leak Master



CUSTOMIZED SOFTWARE FOR HMI TERMINAL/PC:

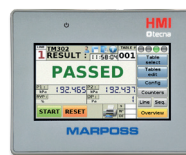
- Software to collect and manage the data of the tests
- Viewing and management of several testing stations
- Parameter programming and SPC analysis of test data
- Virtual Instrument for National Instruments LabView™ available at request.

HMI TERMINAL:

Weintek MT8050i operator terminal with 4.3" touchscreen display, 2 serial line interfaces RS485/232, 1 USB Host interface, 1 Ethernet interface .

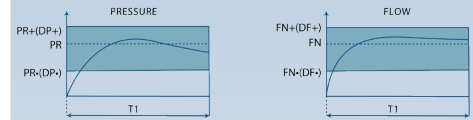
Preloaded software to manage up to 8 TM3F instruments. Libraries for other PLCs and HMI viewers are available upon request.

Ethernet connection to PLC and PC.



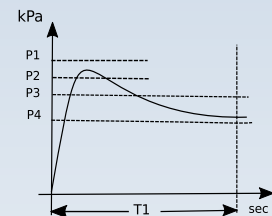
TM3PF

Measurements of pressure and flow



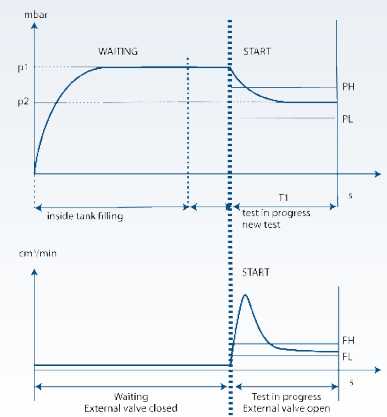
TM3PF-CV

Measurements of pressure and flow for check valves

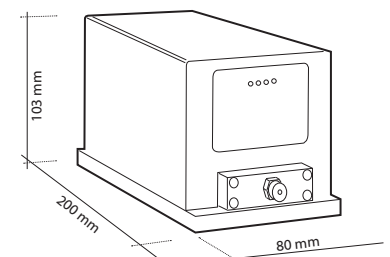


TM3PQ

Leak tests with direct measure of the leak flow rate



DIMENSIONS:



Delta TM3PD

MODULE FOR LEAK TEST
WITH DIFFERENTIAL METHOD
ON AUTOMATED SYSTEM



MINIMAL SIZE
HIGH PERFORMANCES
DESIGNED FOR MULTIPLE
TESTING STATIONS

- Leak test up to 30 bar
- Resolution up to 0.1 Pa, differential full scale from 10 to 50 mbar
- Fully integrated pneumatics and electronics
- Test time reduced
- Ease of use and installation
- Digital interface for PLC
- Communication Interfaces RS485 and USB
- Up to 300 test tables



For further information:
www.tecnasrl.com/prodotti/tm3pd



Tests

DELTA TM3PD pneumatic modules represent the blend of traditional leak test equipment and are the best solution to integrate a reliable and compact testing station into your automated system.

The absence of buttons and displays has allowed to reduce overall dimensions, so as to ensure their placement in any type of system, as close as possible to the component under test, minimizing unnecessary

volumes and increasing the speed and sensitivity of the test. DELTA TM3PD pneumatic modules can be connected and controlled by any PLC.

DELTA TM3PD can be connected to:



SOFTWARE MANAGER to manage TM3 test modules, data collection and statistics process analysis



Traditional PLC system

Delta TM3PD

TECHNICAL FEATURES

| | |
|-------------------------|--|
| Power Supply | 24 Vdc - 1 A max |
| Compressed Air Line | Dry, non-condensing, 5-micron filtered, and oil-free air, compliant with ISO8573-1, 6x4 mm hose fitting 4x2.5 / 6x4 / 8x6 mm Pilot pressure compatible with the instrument full scale |
| Sensor Calibration | Remote control software procedure with external sample instruments |
| A/D Converter | 2x24 bits |
| Pressure Regulator | External (option) |
| Indicators | 4 LEDs: two yellow (test phases), green (passed), red (failed) |
| Test Counter | PASSED and FAILED totals, resettable to zero |
| Clock | Clock Date and time, with supercap, 7 days back up max |
| Programmable parameters | Up to 300 testing tables, general testing parameters |
| PLC Connection | 2 Photocoupled inputs: START / RESET 4 Photocoupled outputs: TEST RUNNING, PASSED, FAILED, ALARM 3 Additional digital inputs (-I3) |
| Data interfaces | RS485 and USB communication interfaces with Modbus protocol |
| Staubli® Connector | For leak masters available on external connection |
| Housing | Unpainted anodized aluminium |

CALIBRATION SERVICE

Each equipment is accompanied by a calibration report released by Tecna srl. According to the requirements of ISO9001 standard, the calibration must be verified at specified intervals against national or international test masters. Tecna srl, through its own specialized personnel and certified instruments, offers a complete scheduled calibration service.

ACCESSORIES

- Pressure Regulator
- Air Filter

CUSTOMIZED SOFTWARE FOR HMI TERMINAL/PC:

- Software to collect and manage the data of the tests
- Viewing and management of several testing station
- Parameter programming and SPC analysis of test data
- Virtual Instrument per LabVIEW™ di National Instruments available at request.

DIFFERENTIAL PRESSURE DECAY

The testing cycle is based on a comparison between the product being tested and a reference volume. In this way, the effects of the pressure settlement inside the tested product are reduced and the accuracy in detecting a leak rate is increased, achieving excellent results in a quicker interval.

OPERATING PRINCIPLE

The testing cycle consists of three phases:

FILLING (time T1):

the product being tested is filled to the programmed rated test pressure.

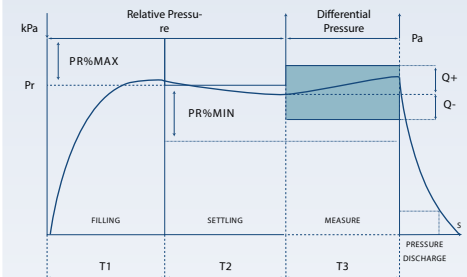
SETTLING (time T2):

this phase is necessary for the settlement of the pressure inside the product being tested.

LEAK MEASUREMENT (time T3):

the pressure difference generated between the product under test and the reference volume is measured.

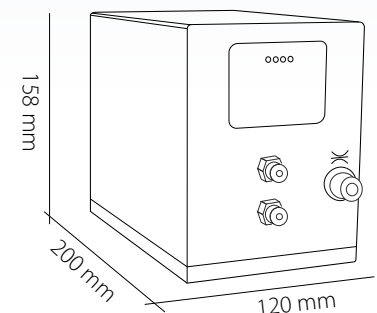
The loss can be indicated as pressure difference (ΔP), or calculated in cm^3 / min or cm^3 / h .



ABSOLUTE PRESSURE DECAY

The testing cycle is based on the pressure decay measured inside of the component being tested, which must be below the set limit to pass the test.

DIMENSIONI



Distribuito da / Distributed by:



Delta **TM3P**

PNEUMATIC MODULE FOR LEAK TESTS BY ABSOLUTE PRESSURE DECAY



- Leak tests up to 20 bar and in vacuum
- Resolution up to 0.1 Pa (0.001 mbar)
- Pneumatic and electronic circuits completely intergrated
- Reduction of the test time
- Easy to install and use
- Digital interface for PLC
- RS485/USB communication interfaces
- 300 test tables



DESCRIPTION

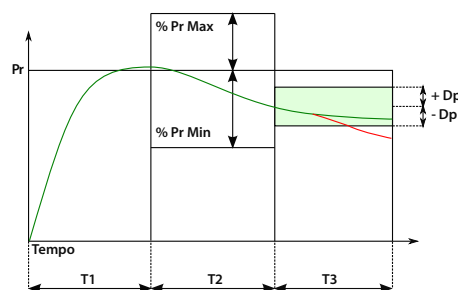
DELTA TM3P pneumatic modules are the ultimate achievement in traditional leak testing and the best solution to integrate a reliable and compact testing station in automated systems. The absence of display or push-buttons

has permitted the reduction of the dimensions, making it possible to fit the module in every automation, as close as possible to the product to be tested, minimising superfluous volumes and increasing the speed and sensitivity of

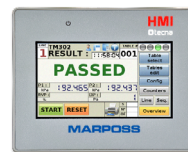
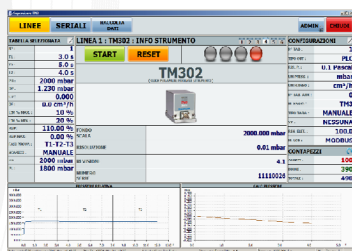
the tests. DELTA TM3P pneumatic modules can be connected to and controlled by every PLC and interfaced to operator terminals.

ABSOLUTE PRESSURE DECAY

The testing cycle is based on the pressure decay measured inside of the component being tested, which must be below the set limit to pass the test.



DELTA TM3P can be interfaced with:



- SOFTWARE MANAGER for TM3 modules management, data storage and statistical process control (SPC)
- Traditional PLC systems
- Generic HMI viewers with dedicated software to manage TM3 test modules

SPECIFICATIONS

| | |
|-------------------------|---|
| Power Supply | 24 Vdc - 1 A max |
| Compressed Air Line | Dry, non-condensing, 5-micron filtered, and oil-free air, compliant with ISO8573-1, 6x4 mm hose fitting Test pressure: externally regulated Pilot pressure for internal valves: 2.5 bar min, 10 bar max |
| Sensor Calibration | Remote control software procedure |
| A/D Converter | 24 bits |
| Pressure Regulator | External (option) |
| Indicators | 4 LEDs: two yellow (test phases), green (passed), red (failed) |
| Test Counter | PASSED and FAILED totals, resettable to zero |
| Clock | Date and time, with supercap, 7 days back up max |
| Programmable parameters | 300 testing tables, general testing parameters |
| PLC Connections | 2 photocoupled inputs: START / RESET 4 photocoupled outputs: TEST RUNNING, PASSED, FAILED, ALARM |
| Data Interfaces | RS485 and USB communication interfaces with Modbus protocol RS232 interface to drive an external electronic pressure regulator |
| Staubli® Connector | Available on external connection for leak masters (option) |
| Housing | Unpainted aluminium |

CALIBRATION SERVICE

Each equipment is accompanied by a calibration report released by Tecna srl.

According to the requirements of ISO9001 standard, the calibration must be verified at specified intervals against national or international test masters.

Tecna srl, through its own specialized personnel and certified instruments, offers a complete scheduled calibration service.

CUSTOMIZED SOFTWARE FOR HMI TERMINAL/PC

- Software to collect and manage the data of the tests
- Viewing and management of several testing stations
- Parameter programming and SPC analysis of test data
- Virtual Instrument for National Instruments LabVIEW™ available at request

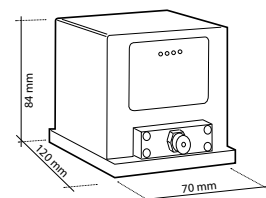
HMI TERMINAL

Weintek MT8050iE operator terminal with 4.3" touchscreen display, 2 serial line interfaces RS485/232, 1 USB Host interface, 1 Ethernet interface .

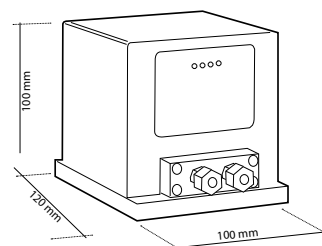
Preloaded software to manage up to 8 TM3P instruments. Libraries for other PLCs and HMI viewers are available upon request.

DIMENSIONI

Fullscale 10 bar version



Fullscale 20 bar version



LTC

Leak Tester Control

PRESSURE CALIBRATOR AND
LEAK SIMULATOR



COMPACT SIZE

EASY TO USE

COMPLETE CIRCUIT WITH INSERTION
VALVE AND NEEDLE MICRO-VALVE FOR
REGULATING THE SIMULATED LEAK

- Full scale pressure: 2 / 6 / 10/ 20 / 40 bar
- Full scale vacuum: -900 mbar
- Resolution: 1 Pa (0.01 mbar)
- Full scale flow: from 50 cm³/min to 950 cm³/min
- Resolution: up to 0.01 cm³/min
- 6 selectable pressure scales
- 3.5" colour TFT LCD display
- Digital thermometer
- Relative humidity sensor



For further information:
www.tecnasrl.com/products/ltc

Tests

The instruments of the LTC Leak Tester Control line are designed to control the efficiency of the equipment used for leak testing. They can also be used as pressure calibrators to verify and certify the equipment's pressure measurements.

Moreover, they can periodically be used as leak simulators to check whether the testing equipment can recognize and REJECT a leak with a given value in cm³/min or cm³/h on the tested objects. Through the LTC instruments, the user can document and certify

the performances of their testing equipment according to ISO9001. LTC instruments help the user to choose more easily which testing parameters have to be programmed on the testing instruments.

SPECIFICATIONS

| | |
|--------------------------|--|
| Power supply: | 5 Vdc / 500 mA max, Micro-USB connector |
| Rechargeable battery | Lithium ions, 3.7 V, 1100 mAh |
| External power supply | Standard: universal adaptor with USB output, 5 Vdc, 1 A, USB cable |
| Full scale | Pressure: 2 / 6 / 10 / 20 / 40 bar; vacuum: -900 mbar Flow: from +/- 50 cm ³ /min up to +/- 950 cm ³ /min |
| Resolution | Pressure: 1 Pa Flow: up to 0.01 cm ³ /min |
| Units | Pressure: mmH ₂ O, inH ₂ O, mbar, kPa, mmHg, psi Flow: cm ³ /min, cm ³ /h |
| Leak regulation | Manual needle valve and insertion solenoid valve for the simulated leak |
| Inner volume | 2 cm ³ max, plus connecting pipes |
| Digital thermometer | Resolution: 0.1 °C; precision +/- 2 °C |
| Relative humidity sensor | Resolution: 0.1% RH; precision +/- 5% RH |
| Keyboard | Resistive touchscreen, on/off button |
| Display | 3.5" colour TFT LCD display with touchscreen |
| Data interfaces | USB Host: data collection and storage (option) |
| Staubli® connector | Staubli® RBE03 coupling for the connection to the test instrument. |
| "T" fitting | "T" fitting for Ø 6x4 mm piping; central Staubli® RBE03 socket with check valve |
| Housing | ABS, aluminum anodized |
| Weight | 1.5 kg |
| Transportation | Carrying case with standard accessories |

Calibration service

Each equipment is accompanied by a calibration report released by Tecna srl. According to the requirements of ISO9001 standard, calibration must be verified at specified intervals against national or international test samples. Tecna srl, through our specialized personnel and certified instruments, offers a complete scheduled calibration service.

STANDARD ACCESSORIES:

- Universal adaptor with USB output, 5 Vdc, 1 A
- USB cable with one USB type A connector and one Micro-USB connector
- USB storage with programs to update the application software
- Carrying case
- Staubli® RBE03 coupling
- "T" fitting with Staubli® RBE03 socket

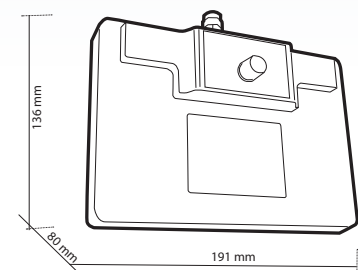
OPERATING PRINCIPLE

The LTC instrument is connected in derivation between the testing equipment and the object being tested with the provided quick-coupling Staubli® "T" fitting.

The operator can adjust the leak flow through a manual needle valve or enable/disable the simulated leak by simply pressing a button on the LCD display. The internal pressure sensor measures the line pressure, the flow sensor measures the actual value of the leak adjusted through the needle valve.

The LTC instrument shows both the test pressure and the leak flow on the display. By simulating a specified leak, the operator can check the testing equipment's efficiency and the correct programming of test parameters. By running a testing cycle with the leak engaged, the operator can check whether the equipment is actually able to detect and REJECT the component being tested with the specified leak.

DIMENSIONS:



Distributed by:

Leak Masters



**A LEAK MASTER GUARANTEES
THE EFFICIENCY OF YOUR
TESTING CYCLE**

**WIDE RANGE OF STANDARD
VALUES**

EASY TO USE

AFFORDABLE AND RELIABLE



For further information:
www.tecnasrl.com/products/leakmaster



Tests

- Each Leak Master is provided with a calibration report that can be referred to national and international primary instruments as per ISO9001
- Fast and easy periodic checks
- Staubli® connector

Leak Masters

To answer to all the quality control needs, the Leak Masters are the ideal operational tools to periodically check the efficiency of the testing systems in a quick and easy way.

At a given pressure, a leak master guarantees a given leak flow rate. By inserting the leak master in the test circuit, you can easily check both the testing equipment and the mechanical connections to the tested product.

Leak Masters have a convenient Staubli® connection and are available in a wide range of values, both standard and customer-specified.

STANDARD VALUE TABLE

| Leak type / Pressure test | Standard leak rates: cm ³ /min (+/- 20%) Reference environmental conditions: 20 °C, 1013 hPa | | | | | | | | | | | cm ³ /min | l/min | |
|---------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------|-------|-------|
| | A0 | A1 | A | B | C | D | E | F | G | H | I | | | K |
| 20 mbar | | | | | | | 0,124 | 0,260 | 0,920 | 2,70 | 2,83 | 5,44 | 61,9 | 150,0 |
| 50 mbar | | | | | | 0,130 | 0,673 | 0,673 | 2,30 | 6,62 | 6,88 | 13,82 | 152,4 | 365 |
| 100 mbar | | | | | 0,139 | 0,271 | 0,658 | 1,380 | 4,59 | 13,15 | 13,87 | 29,4 | 300 | 691 |
| 150 mbar | | | | 0,102 | 0,211 | 0,419 | 1,006 | 2,11 | 6,81 | 20,0 | 21,8 | 45,0 | 443 | 990 |
| 200 mbar | | | | 0,141 | 0,286 | 0,569 | 1,371 | 2,86 | 9,03 | 26,2 | 29,5 | 61,2 | 582 | 1273 |
| 300 mbar | | | 0,089 | 0,219 | 0,446 | 0,887 | 2,14 | 4,46 | 13,46 | 39,0 | 46,0 | 95,0 | 852 | 1825 |
| 500 mbar | | 0,096 | 0,157 | 0,389 | 0,794 | 1,588 | 3,83 | 8,00 | 22,7 | 63,5 | 82,3 | 212 | 1383 | 2,69 |
| 1 bar | | 0,223 | 0,356 | 0,901 | 1,845 | 3,72 | 9,15 | 18,64 | 46,4 | 124,0 | 193,0 | 380 | 2,57 | 4,92 |
| 2 bar | 0,075 | 0,560 | 0,887 | 2,28 | 4,66 | 9,49 | 23,3 | 64,0 | 99,0 | 246 | 483 | 884 | 5,00 | 9,01 |
| 3 bar | 0,135 | 0,999 | 1,591 | 4,07 | 8,44 | 17,21 | 41,4 | 82,2 | 156,3 | 374 | 844 | 1470 | 7,31 | 13,02 |
| 4 bar | 0,210 | 1,553 | 2,46 | 6,31 | 13,30 | 27,2 | 62,6 | 121,4 | 218 | 502 | 1257 | 2,09 | 9,88 | 16,44 |
| 5 bar | 0,297 | 2,21 | 3,50 | 8,97 | 19,35 | 38,7 | 86,3 | 164,4 | 283 | 634 | 1720 | 2,75 | 12,38 | 20,19 |
| 8 bar | 0,640 | 4,77 | 7,68 | 19,34 | 42,4 | 81,3 | 167,6 | 310 | 491 | 1052 | 3,20 | 4,86 | 18,74 | 33,73 |
| 10 bar | 0,930 | 6,94 | 11,23 | 28,2 | 61,7 | 114,5 | 227 | 413 | 636 | 1341 | 4,28 | 6,15 | | |

*Out of standard values are available on request.

REFERENCE CONDITIONS:

- The leak masters can be certified on request at normalized standard conditions (0 °C, 1013 hPa)

INSTRUCTION FOR USE AND PRECAUTIONS:

- The leak master must be inserted in the testing circuit
- Handle with care, avoid all impacts, store inside the case after use
- Only use dry, non-condensing, 5-micron filtered, and oil-free air, compliant with ISO8573-1

Calibration service

Each equipment is accompanied by a calibration report released by Tecna.

According to the requirements of ISO9001 standard, calibration must be verified at specified intervals against national or international test samples.

Tecna srl, through its own specialized personnel and certified instruments, offers a complete scheduled calibration service.



DISTRIBUTED BY:

TECNA SRL
Via Statale Sud, 115
41037 Mirandola -Italy
Tel +39 0535 27833
www.tecnasrl.com
sales@tecnasrl.com