

Test & Calibration Kit

Honeywell



**For Maintenance and Servicing of
Electric and Electro-pneumatic Level / Pressure Transmitter**

Technical Manual

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**For Maintenance and Servicing of
Electric and Electro-pneumatic Level / Pressure Transmitter**

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1. INTRODUCTION

Specially designed for the maintenance, servicing and calibration of Honeywell Marine's pneumatic, electro-pneumatic and electric transmitters, this Test & Calibration kit is provided with all necessary accessories and instruments insuring quick and efficient operation.

2. KIT DESCRIPTION

The Test & Calibration kit is contained in a black polypropylene suitcase with shoulder strap. It is composed of :

- A pressure calibrator model 718-30G, including pressure generation range –850 to 2200 mbar relative, with integrated pump, together with an electric current measurement, with 24 Vdc loop power;
- A set of spare batteries for above;
- A flow meter for bubbling transmitters, with coupling for 4 x 6 mm tube;
- A set of pneumatic couplings and tube :
 - 2 couplings 1/4" for 4 x 6 mm tube;
 - 3 couplings 1/8" for 4 x 6 mm tube;
 - 1 coupling 3/8", with coupling for 4 x 6 mm tube;
 - 2 dual coupling for 4 x 6 mm tube;
 - 1 Te shape coupling for 4 x 6 mm tube;
 - 3 meter 4 x 6 mm transparent plastic tube;
 - 0.5 meter 4 x 6 mm soft transparent plastic tube;
- An interface tool for PL3700-PL3700 C level/pressure transmitter calibration (except flange welded models), composed of nut with coupling for 4 x 6 mm tube, , and screw, and adaptation reduction, ref 35629
- An interface tool for the pressure sensor of T901P transmitter, with coupling for 4 x 6 mm tube, ref. T29195;
- An equipped resistance of 100 ohms 3 wires for temperature transmitter's line test, ref. T29235;
- A set of specialized tools for above transmitters :
 - 7 mm spanner mixt type;
 - 3 mm male hexagonal spanner;
 - 4 mm male hexagonal spanner;
 - 3/16" male hexagonal spanner;
 - 1/4" male hexagonal spanner;
 - 2.5 x 75 mm screwdriver;
 - 3.5 x 100 mm screwdriver;
- The User's Manual of the pressure calibrator model 718-30G;
- The present MT5023E Manual.

The pressure calibrator model 718-30G is provided with its initial calibration certificate. Further periodic calibrations are to be carried out in compliance with the User's Quality Assurance program.

Refer to the calibrator own User Manual in order to look at the technical specifications and to operate. The pneumatic output is to be equipped with a provided coupling 1/8" for 4 x 6 mm tube, sealed with PTFE ribbon.

3. OPERATION

3.1. CT100M, CT150, CT180

CT100M is the pneumatic bubbling modulator. CT150 and CT180 are the level indicator gathering the CT100M modulator with a mechanical pointer manometer.

The flow meter allows controlling the bubbling flow, while the calibrator allows to check the efficiency and leakproofness of the over-pressure protection valve and to check the calibration. Refer to the Technical Manual NT5004 for CT100M, Technical Manual CT150, Installation, Operating and Maintenance Manual NT5001 for CT180.

To check the calibration :

- Disconnect the manometer's pneumatic 4 x 6 mm tube from the pneumatic module outlet;
- Connect the pneumatic output of the calibrator to the manometer input, using 4 x 6 mm tube with dual coupling;
- Proceed to the calibration by pressure generation from the calibrator. If the transmitter's pressure range is higher than 2200 mbar, select another calibration point inside the calibrator's range.

3.2. CT801, CT801LB/S

CT801 is the electro-pneumatic bubbling level transmitter.

The flow meter allows controlling the bubbling flow, while the calibrator allows to check the efficiency and leakproofness of the over-pressure protection and safety valves, and to check the calibration. Refer to the Maintenance Manual CB322382 for CT801, or MM5019 for CT801LB/S.

To check the calibration :

- Make sure to be allowed to proceed in compliance with current rules regarding hazardous area;
- Switch off the CT801 power supply;
- Disconnect the 4-20 mA output wires from the CT801 electronic module terminals, and the sensor's pneumatic tubes from the pneumatic module outlets;
- Connect the pneumatic output of the calibrator to the high pressure input of the CT801's sensor, using 4 x 6 mm tube with dual coupling;
- Connect the electrical input of the calibrator to the CT801 electronic module terminals; use loop power mode;
- Proceed to the calibration by pressure generation from the calibrator while reading the current value in mA. If the transmitter's pressure range is higher than 2200 mbar, select another calibration point inside the calibrator's range.

When the range is lower than -850 mbar and when the tank is empty, it is possible to avoid disconnection of the sensor, and to connect the pressure generator to the Inert Gas connection using a 1/8" coupling; then proceed to calibration by vacuum generation.

3.3. CT700

CT701 or CT702 is the electric pressure / level transmitter, CT700-R uses a remote electronic module. Refer to the Installation and Maintenance Manual CB322409 or CB322535 for High Temperature model.

To check the calibration :

- Make sure to be allowed to proceed in compliance with current rules regarding hazardous area;
- Switch off the CT700 power supply;
- Disconnect the 4-20 mA output wires from the CT700 electronic module terminals or from the remote electronic module for CT700-R;
- Depending of the CT700 installation configuration, connect the pneumatic output of the calibrator to the test pressure inlet on flange with provided couplings sealed with PTFE ribbon, or to the pressure inlet of the CT700 after disassembly, using 4 x 6 mm tube with 3/8" coupling, sealed with PTFE ribbon;
- Connect the electrical input of the calibrator to the CT700 electronic module terminals or to the remote electronic module for CT700-R; use loop power mode;
- Proceed to the calibration by pressure generation from the calibrator while reading the current calibration point inside the calibrator's range.

3.4. PL3700-PL3700 C

PL3700 is the electric pressure / level transmitter. Refer to the Installation and Maintenance Manual MM5090.

To check the calibration :

- Make sure to be allowed to proceed in compliance with current rules regarding hazardous area;
- Switch off the PL3700 power supply;
- Disconnect the 4-20 mA output wires from the PL3700 remote electronic module terminals;
- Connect the pneumatic output of the calibrator using 4 x 6 mm tube, to the test pressure inlet on flange with provided couplings sealed with PTFE ribbon, or to the pressure inlet of the PL3700 screwed model, using the dedicated mechanical interface T35629 by taking care with the gasket; for PL3700 C do not mount the adaptation reduction \varnothing 49.5mm.
- Connect the electrical input of the calibrator to the PL3700 remote electronic module terminals; use loop power mode;
- Proceed to the calibration by pressure generation from the calibrator while reading the current value in mA. If the transmitter's pressure range is higher than 2200 mbar, select another calibration point inside the calibrator's range.

3.5. T901P

T901-PXX is the temperature / pressure transmitter used in TA840 and EMx40 Radar gauging system, for measurement of cargo's temperature and inert gas pressure. For that last function, it includes a pressure module. Refer to the Manual MM5016.

To check the calibration of the pressure module :

- Make sure to be allowed to proceed in compliance with current rules regarding hazardous area;
- Switch off the TA3840S (or TA840-I) power supply;
- Disassemble the pressure sensor from the flange, unscrewing the two screws; screw the sensor on the dedicated mechanical interface by taking care with the gasket;
- Connect the pneumatic output of the calibrator using 4 x 6 mm tube, to the interface pressure inlet;
- Switch on the TA3840S (or TA840-I) power supply;
- Proceed to the calibration by pressure generation from the calibrator while reading the pressure value on the system Monitoring.

3.6. Temperature transmitter line

The 100 ohms 3 wires resistance allows to check a temperature transmitter line : connect the resistance instead of the temperature transmitter output wires, and check that the reading is 0 ± 0.4 °C. If different, the line should be restored.

4. INFORMATION

4.1. Reference of Honeywell Marine Customer Service

For any request or help you can contact Honeywell Marine customer's services at the following references.

Tel: + 33 (0) 2.48.23.79.28

Fax: + 33 (0) 2.48.23.79.02

E-mail: service.marine@honeywell.com

For sending equipment to check or to repair:

Honeywell Marine SAS

Customer's department

9 rue Isaac Newton

18000 BOURGES

FRANCE

Honeywell Marine SAS

9, Rue Isaac Newton

18000 Bourges

France

Tel + 33 (0) 2 48 23 79 01

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