



TATSUNO EUROPE a.s.

LPG MASTER METER

TATSUNO EUROPE

Technical Specification

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This manual is intended for the users of TATSUNO EUROPE LPG Master Meter. TATSUNO EUROPE a.s. recommends thorough reading of this manual. The manual must be available to the dispenser attendant during operation and regular maintenance of the LPG Master Meter.

- Make it available to other owners and users.

The contents of the manual at the time of its release corresponds to reality. The manufacturer reserves the right to alter the technical specifications of the device or its properties without a written notice, due to its development and continuous improvement. All rights are reserved. No part of this manual may be reproduced or transferred without a written approval of TATSUNO EUROPE a.s.

Document revisions

Revision No. / Date	Changes	Made by
Revision 00 / 18. 5. 2023	Basic version of the document	Milan Berka
Revision 01 / 13. 7. 2023	Change of technical parameters	Milan Berka

1. PERMITTED USE


TATSUNO EUROPE LPG Master Meter is designed for metrological verification of LPG dispensers on service station.


NOTICE Any modification of the LPG Master Meter may invalidate the device certification.

Each LPG Master Meter is properly tested in the factory in terms of its function, safety, and metrology. The delivery of each LPG Master Meter also contains certification documents that must be submitted by the operator on demand.

2. BASIC TECHNICAL PARAMETERS

Maximum flow rate Q_{\max} [L/min]	50
Minimum flow rate Q_{\min} [L/min]	5
Lowest metering MMQ [L]	5
Maximum pressure [MPa]	1.6
Minimum pressure [MPa]	0.7
Maximum volume [L]	9999.9 L
Scale interval [L]	0.01 L
Type of delivered fluid	LPG (liquefied propane-butane)
Fluid temperature range [°C]	-15 to +40
Ambient temperature range [°C]	-15 to +40
Accuracy	< $\pm 0.5\%$ (according calibration certificate); design accuracy = $\pm 0.2\%$
Mechanical class	M2
Humidity	Condensing
Location	Open
Measured unit	Volume [L]
Counter with Display and Totalizer	Mechanic counter (5) with wheel for mechanical zeroing (6) and 8-digits non-reset totaliser (7)
Measuring device	LPG piston meter TATSUNO type MP-025024 (1) with back valve
Filtration of mechanical particles	Input filter >25 μ m (2)
Pressure gauge	0 – 63 bar (0 – 6.3 MPa); 63 mm (3)
Input connection	DISH connector (8) for nozzle LPG 821 IGSY or ELAFLEX ZVG 2 DISH or another DISH type)
Output connection	Hose ELAFLEX LPG DN16 (4.5m) with nozzle LPG 821 IGSY terminated by DISH connector (4)
Shut Off Valves	mechanical, 3/4" (9)

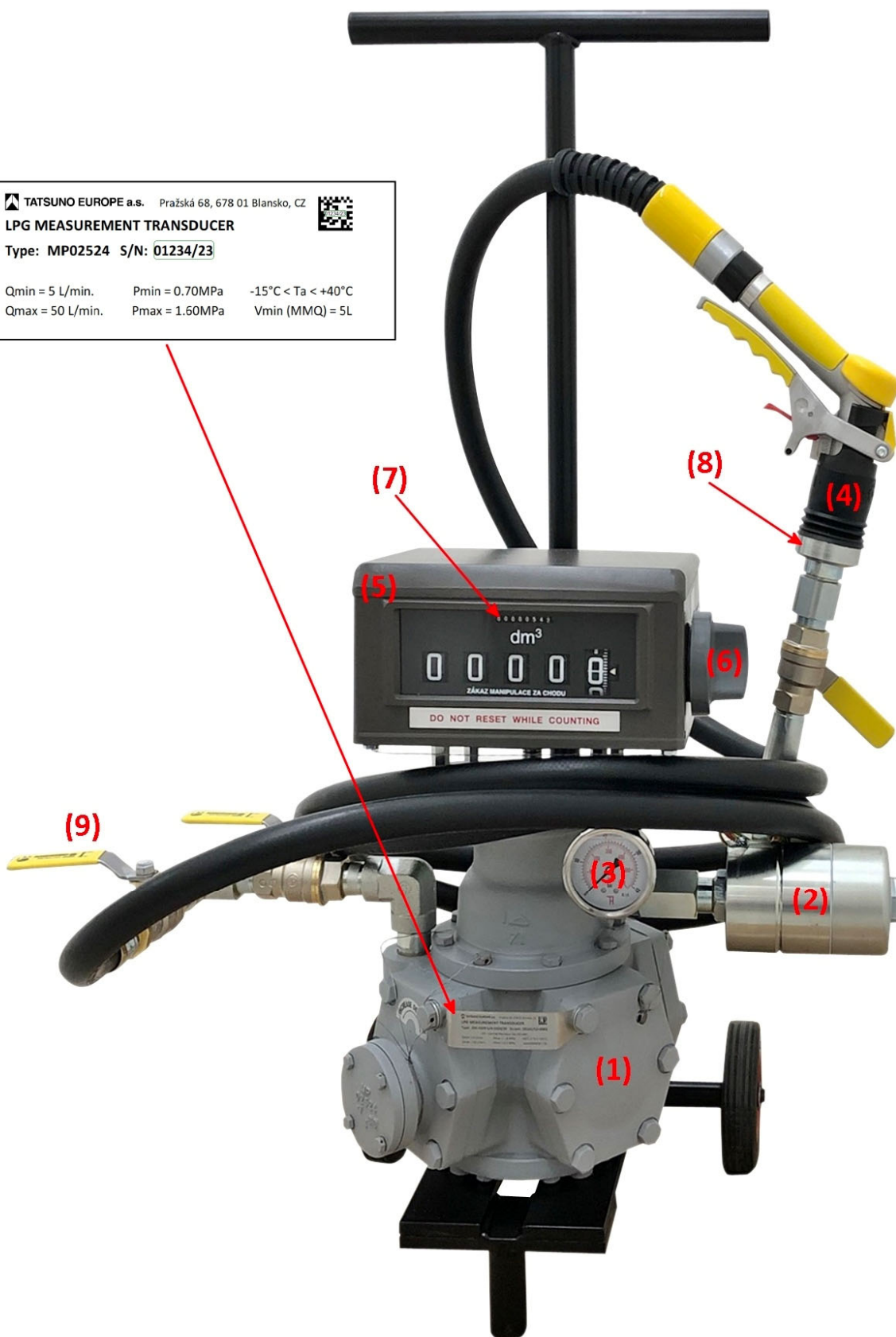

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LPG MEASUREMENT TRANSDUCER

Type: **MP02524** S/N: **01234/23**

Qmin = 5 L/min.	Pmin = 0.70MPa	-15°C < Ta < +40°C
Qmax = 50 L/min.	Pmax = 1.60MPa	Vmin (MMQ) = 5L



3. DESCRIPTION OF CALIBRATION PROCESS (RECOMMENDED)

- 1) LPG master meter is connected to LPG dispenser
- 2) The preliminary run is used to flush the dispenser with the test liquid, to equalize the temperatures and to reliably flush out the gas phase. The LPG dispenser is started and the dispenser is pre-run for 2 to 3 minutes at a maximum flow rate of at least 100 L. The presence of the gas phase is observed in the sight glass.
- 3) The temperature volume correction on the dispenser counter is switched off.
- 4) The LPG pump starts
- 5) A high flow rate Q(1) is set
- 6) The exact test amount of liquid ($V_n = 100$ litres) is pumped according to the LPG Master Meter (if possible, without any interruption)
- 7) The volume V_n (on Master Meter), the volume V_i (on the display of LPG dispenser) is read and the corrected standard volume V_{nk} and the meter error EV are calculated. The EV meter error is logged along with the Q(1) high flow value.
- 8) Set the low flow rate Q(2)
- 9) The exact test amount of liquid ($V_n = 20$ litres) is pumped according to the LPG Master meter (if possible, without interruption)
- 10) The volume V_n (on the Master Meter), the volume V_i (on the LPG dispenser) is read and the corrected standard volume V_{nk} and the meter error E_v are calculated. The E_v meter error is logged along with the low flow Q(2) value.

$$E_v = (V_i - V_{nk}) / V_{nk} \times 100$$

where: E_v is the error of the LPG dispenser meter (%),
 V_i volume displayed on the tested LPG dispenser (L),
 $V_{nk} = V_n \times C_s$ corrected volume of the LPG Master Meter (L)
 V_n volume displayed on the Master Meter (L),
 C_s is the correction factor for the given flow rate. The values of the correction factor are listed in the calibration certificate of the Master Meter (see chapter 5).