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REPORT OF CONFORMITY TEST

Date of issue: 02.04.2024 (dd.mm.yyyy) Report No: 751/34/LA/C/2024

OBJECT OF CONFORMITY TEST	**Volume conversion device** Type: **MacBAT 5** Serial number: **1007542008** Program version / Bootloader version: **S013.78_V142637 / B15** CRC: **CrcMain=934C8A73; CrcBoot=34CD6BC3** Gas pressure measurement range (P1): **(0.8 ÷ 10) bar abs** Gas temperature measurement range: **(-30 ÷ 70) °C** Pressure sensor serial number (P1): **1007295922** Temperature sensor serial number: **1007441550**
MANUFACTURER	PLUM Sp. z o.o. ul. Wspólna 19, Ignatki, 16-001 Kleosin, Poland
EU-TYPE EXAMINATION CERTIFICATE	DE-19-MI002-PTB004
METHOD AND TEST CONDITIONS	Test procedure: ILAJ 5.4/10, according to point A.1.4.2 of EN 12405-1. Base conditions: p_b = 1.01325 bar, T_b = 20 °C Combustion reference temperature: T_1 = 20 °C Test algorithm range: (-30 ÷ 70) °C Algorithm: AGA8-92DC Test gas (%mol): C1=85.9, C2=8.5, C3=2.3, n-C4=0.35, i-C4=0.35, n-C5=0.05, i-C5=0.05, neo-C5=0, C6+=0, N2=1, CO2=1.5, C6H14=0, C7H16=0, C8H18=0, C9H20=0, C10H22=0, H2=0, H20=0, H2S=0, CO=0, He=0, Ar=0, O2=0
CONFORMITY WITH REQUIREMENTS	The object of conformity test meets the requirements specified in Annex IV of Directive 2014/32/EU of the European Parliament and of the Council. The results of conformity test have been presented on page 2 of this report including uncertainty of measurement.

CALIBRATION LABORATORY plum PLUM Sp. z o.o.

DEPUTY MANAGER
of the Measurement Laboratory
Piotr Chociej
Piotr Chociej MSc. Eng.

Digitally signed by Pogreban Igor
Date: 2024.05.23 16:00:06 EEST
Reason: MoldSign Signature
Location: Moldova

RESULTS OF CONFORMITY TEST Test results are the following.

Conversion factor *C*

Reference value			Indication of tested device			Error	Uncertainty of measurement
Temperature	Pressure	Conversion factor	Temperature	Pressure	Conversion factor		
t_{CV}	p_{CV}	C_{CV}	t	p	C	e_C [1]	U_C
°C	bar abs	-	°C	bar abs	-	%	%
-30.01	0.8000	0.953031	-30.01	0.8001	0.953156	0.01	0.15
-30.01	3.1000	3.733017	-30.01	3.1003	3.733420	0.01	0.13
-30.01	5.4000	6.574768	-30.01	5.4003	6.575239	0.01	0.09
-30.01	7.7000	9.481333	-30.01	7.7004	9.481881	0.01	0.09
-30.01	10.0000	12.456152	-30.01	10.0004	12.456740	0.00	0.09
20.00	10.0000	10.097095	19.99	10.0003	10.097703	0.01	0.09
20.00	7.7000	7.729113	19.98	7.7002	7.729603	0.01	0.08
20.00	3.1000	3.075549	19.99	3.1003	3.075963	0.01	0.12
20.00	0.8000	0.789128	19.99	0.8001	0.789291	0.02	0.15
69.98	0.8000	0.673587	69.97	0.8001	0.673672	0.01	0.15
69.98	3.1000	2.618618	69.97	3.1003	2.618922	0.01	0.12
69.98	5.4000	4.576206	69.97	5.4000	4.576321	0.00	0.08
69.98	7.7000	6.546339	69.97	7.7002	6.546746	0.01	0.08
69.98	10.0000	8.529194	69.97	10.0003	8.529640	0.01	0.08

[1] relative error

Volume at base conditions V_b

Reference value			Indication of tested device	Error	Uncertainty of measurement
Temperature	Pressure	Volume at base conditions			
t_{CV}	p_{CV}	V_{CV}	V_b	e_V [2]	U_V
°C	bar abs	m^3	m^3	%	%
20.00	5.4000	538.87	538.90	0.01	0.09

[2] relative error

Maximum error $\|e_C\|$	= 0.02%	< 0.5%
Error $\|e_V\|$	= 0.01%	< 0.5%
Maximum error $\|e_p\|$	= 0.02%	< 0.2%
Maximum error $\|e_t\|$	= 0.00%	< 0.1%

ENVIRONMENTAL CONDITIONS Ambient temperature: (23.2 ÷ 24.1) °C
Relative humidity: (39 ÷ 49) %

DATE OF TEST 02.04.2024 (dd.mm.yyyy)

TRACEABILITY This report provides traceability of measurement to national measurement standards, which realize the units of measurement according to the International System of Units (SI). Measurement standards applied for calibration have been listed below.

Name of measurement standards	Type	Serial number
Electronic Thermometer	MacREJ 5	1004466418
Standard Pulse Counter	MacIMP E	92701i
Pressure Controller	CM2-B-13G	10329693

UNCERTAINTY OF MEASUREMENT Uncertainty of measurement has been evaluated in compliance with EA-4/02. The expanded uncertainty assigned corresponds to a coverage probability of 95% and the coverage factor k = 2.