Test Report



Batch test report for LMC-56 Document: #23886/83032

Device serial number:	010221-2204-0006 ÷ 0015, Total: (10)
Testing date:	02.05.2022
Test conditions:	Temperature 23 °C, Relative Humidity 34 %

Testing equipment and accessories:	
Multimeter 6200 Nr. 9761042.	Certificate of calibration Nr. E0011K22
Multimeter 6200 Nr. RO1903024.	Certificate of calibration Nr. E0010K22
Multimeter 6200-2 Nr. ROB5010002.	Certificate of calibration Nr. ROB5010002
Tachometer BIOSAN T-2 Nr. 120906.	Certificate of calibration Nr. E0054KD20
Tachometer BIOSAN T-3 Nr. 12482.	Certificate of calibration Nr. E0055KD20
Tachometer PeakTech 2790 Nr. 151122102.	Certificate of calibration Nr. E0314KD21
Timer ARG010 Nr. 15851.	Certificate of calibration Nr. 786566
Test Procedure:	

Test	results		
#	Indicators	Result	Tolerance
1	Visual appearance	PASS	Without any visible defects
2	Button performance	PASS	Each button works as intended
3	Alarm signal	PASS	Works, stable
4	Lock check	PASS	The lid is closed tightly, and the device does not work with the lid open
5	Opening lock using key	PASS	Check if possible, to open device lid using key in emergency
6	Disbalance performance check	PASS	In case of disbalance rotation automatically stops
7	Time to achive maximal rotation speed with acceleration mode (F)	PASS	≤ 20 sec
8	Time to fully stop rotation with stop mode (F)	PASS	≤ 35 sec
9	Device performance with load	PASS	No external noise and defects after a

			performance
10	Rotation speed 100 rpm	PASS	100 ± 10 rpm
11	Rotation speed 4200 rpm	PASS	4200 ± 20 rpm
12	Rotation speed 6000 rpm	PASS	6000 ± 30rpm
13	Rotor identification speed	PASS	≤ 5 sec
14	heck rotor identification	PASS	Same as stated in methodology, standard - BR-4U (50ml 4200), R-24/10i (4000) - 1 min
15	Sound level check R-6i (4200)	PASS	≤ 72 dB
16	Insulation resistance	PASS	≥ 2 MOhm
17	Ground resistance	PASS	≤ 0.1 Ohm

Tested by: engineer of quality control department	A. Dubrovskis
Conclusion:	Unit meets the indicated specifications and is considered to be fit for operation.

Results of test apply only to the batch devices, with which this test was done. This report may be copied only in full form and with written permission from Biosan SIA



KALIBRAVIMO LIUDIJIMAS

Nr. 786566

EA1.3-01-987/1

Number of pages

Page

2

Applicant

BIOSAN Ltd

Ratsupites 7, build. 2, LV-1067, Riga, Latvia

Order Nr. K12-1288

Instrument

Timer/Stopwatch ARG010 Nr. 15851

Calibration Method

Comparison method using calibration procedure Nr. EA 1.3 (2007-08-27, L1)

Environmental Conditions

Temperature:

20,4 °C

Humidity:

51.7

Period (date of calibration) 2012-09-24

Results

In pages 2-5

Traceability

The measurement have been executed using the following standards for which the traceability to national standards has been demonstrated towards unbreakable chain of calibration: Frequency Counter 43-63/1 Nr. 9106331 (calibrated by VMC 2011-08-19 Nr. 796516 EA1.3-00-1342), Precision Generator Γ3-122 Nr. 1826 (calibrated by VMC 2011-03-21, Nr. 794642 EA2.3-00-831)

Date of delivery of **Calibration Certificate**

2012-09-24

Chief of the Department - Technical Manager

Tatiana Zapolskene

Senior Engineer

OLO Zita Balachovičienė

Uncertainty: The expanded uncertainty is based on a standart uncertainty multiplied by a coveradge factor of k=2, which provides a confidence level of approximately 95%. The standart uncertainty has been determined in accordance with EA-4/02

LIUDHIM

Neapibrėžtis. Išplėstinė neapibrėžtis apskaičiuota suminę standartinę neapibrėžtį padauginus iš koeficiento k=2, kuri, esant normaliniam skirstiniui, atitinka 95% pasikliautinumo lygmenį. Standartinė neapibrėžtis apskaičiuota pagal EA-4/02.

Dariaus ir Girėno g. 23 LT-02189 Vilnius, LIETUVA Tel. (8 5) 230 6276 Faks. (8 5) 230 6364 El. paštas vmc@vmc.lt Internetas www.vmc.lt

Kalibravimo liudijimas gali būti dauginamas tik pilnai. Atskiras kalibravimo liudijimo dalis galima dauginti tik gavus raštišką kalibravimo laboratorijos leidimą.

CALIBRATION CERTIFICATE

Nr. 786566 EA1.3 -01-987/1

ANNEX

Number of pages

Page

2

Timer/Stopwatch ARG010 Nr. 15851

Calibration results

Measurable Value	Measured Value	Expanded uncertainty
5 s	4,994 s	0,029 s
30 s	30,050 s	0,024 s
60 s (1 min)	60,015 s	0,032 s
1800 s (30 min)	1800,06 s	0,58 s
3600 s (1 h)	3599,54 s	0,47 s

Note:

The results of calibration are valid under such environmental conditions:

Temperature: $(20 \pm 5)^{\circ}C$; Humidity: $(65 \pm 15)^{\circ}\%$

Senior Engineer

Date

2011-09-24

Tatiana Zapolskene



SABIEDRĪBA AR IEROBEŽOTU ATBILDĪBU "LATVIJAS NACIONĀLAIS METROLOĢIJAS CENTRS"

Reģ. Nr. 40003435328, K. Valdemāra iela 157, Rīga, LV-1013, tālr.: 67378165 E-pasts: info@Inmc.lv, http://www.lnmc.lv

KALIBRĒŠANAS SERTIFIKĀTS Nr. E0054KD20

CALIBRATION CERTIFICATE

Kalibrēšanas uzlīme Nr. 433414

Page

Label of calibration

Laboratorija

Daugavpils nodaļa, Sakņu 16/18, Daugavpils, Latvija, LV-5403

Daugavpils department, Saknu str. 16/18, Daugavpils, Latvia, LV-5403

Mērlīdzekļa nos	saukums	Tahometrs
Calibration item	X -	
Tips T-2	Nr. 120906	Mērdiapazons $(1 \div 9999) rpm$
Туре	Serial No	Measuring range
- 53		
Ražotāj <u>s</u>	ES	
Manufacturer		
D = 1515	SIA "Biosan"	
Pasūtītā <u>j</u> s		
Customer	Rātsupītes iela 7 k-2, Rīga	
Kalihrēšanas m	netode un nosacījumi: <i>LNN</i>	MC D2/2016
	and environmental conditions	
Temp	eratūra: (20÷5)°C; Ga	iisa relatīvais mitrums līdz 80%
Date of calibration Rezultāti: Results	Skatīt 2. lpp.	
Izsekojamība:		ators Γ3-110 Nr.3262; Iekārta УТО5-60 Nr.715
Traceatability	Izsekojamība nodrošināta līdz Lie	etuvas frekvences etalonam (VMC).
TROPE TO	/	Izpildītāje
AR IEROBEŽOTU ATBILOŽE	Laboratorijas vadītāja	Izpildītājs Operator
	Head of Laboratory	Б
Zugavpils \	Inese Komo	arova E.Rodionova
modale /	1-1	
ONALAIS METROLISTIS	(signature and name)	(signature and name)
ONALAIS METROLOS	X	
Izsniegšanas o	datums: 2020. gada17.mart	ts
Date of issue		Lapas puse 1(2)

Sertifikātu aizliegts pavairot nepilnā apjomā bez kalibrēšanas laboratorijas rakstiskas atļaujas.

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KALIBRĒŠANAS SERTIFIKĀTS Nr. E0054KD20

Mērījumu rezultāti:

Measuring result

Lapas puse 2(2)
Page

Etalona vērtība	tahometra vidējie	Kļūda	Nenoteiktība	Nenoteiktība
rpm	rādījumi rpm	rpm	rpm	%
100	100.3	0.33	± 0.78	± 0.78
250	249.7	-0.33	± 0.87	± 0.35
300	300.0	0.00	± 0.65	± 0.22
600	600.3	0.33	± 1.04	± 0.17
1000	1000.0	0.00	± 1.00	± 0.10
3000	2999.7	-0.33	± 2.20	± 0.07
4000	3999.5	-0.50	± 2.31	± 0.06

Uzrādītā paplašinātā nenoteiktība ir mērījumu standartnenoteiktība, kas reizināta ar pārklāšanās koeficentu k=2, kura pie normālsadalījuma atbilst apmēram 95 % pārklāšanās varbūtībai. Mērījuma standartnenoteiktība noteikta saskaņā ar dokumentu EA-4/02 M:2013.

The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximation 95%. The Standard uncertainty of measurement has been determined in accordance with Publication EA-4/02 M:2013.

Izpildītājs

Operator

E. Rodionova

(signature and name)



SABIEDRĪBA AR IEROBEŽOTU ATBILDĪBU "LATVIJAS NACIONĀLAIS METROLOĢIJAS CENTRS"

Reg. Nr. 40003435328, K. Valdemāra iela 157, Rīga, LV-1013, tālr.: 67378165 E-pasts: info@Inmc.lv, http://www.Inmc.lv

KALIBRĒŠANAS SERTIFIKĀTS Nr. E0055KD20

CALIBRATION CERTIFICATE

Kalibrēšanas uzlīme Nr. 433415

Label of calibration

Page

Laboratorija

Daugavpils nodaļa, Sakņu 16/18, Daugavpils, Latvija, LV-5403

Daugavpils department, Saknu str. 16/18, Daugavpils, Latvia, LV-5403 Laboratory

Mērlīdzekļa no	saukums		Tahometr	rs	
Calibration item	1				
Tips T-3	Nr.	012482	Mērdia	pazons $(1 \div 9999) r$	pm
Туре	Serial No)	Measuring	range	
Ražotājs	ES	=			
Manufacturer	VIC				
Pasūtītājs	SIA "Biosan"				
Customer	Rātsupītes iela	7 k-2, Rīga			
Kalibrēšanas n	netode un nosacī		AC D2/201	6	
	and environmental converat \bar{u} ra: $(20 \div 5)$		isa relatīvo	ais mitrums līdz 80%	6
Kalibrēšanas c Date of calibration Rezultāti: Results	Skatīt 2. lpp.	gada 17.mart.			
Izsekojamība:				Nr.3262; Iekārta УТО5	-60 Nr.715
Traceatability		drošināta līdz Lie	etuvas frekvei	nces etalonam (VMC).	
IBA AR IEROBEZOTU ATBILDI	Laboratorija Head of	s vadītāja Laboratory		Izpildītājs Operator	
Damownile \	(paraksts vārds, uzv	Inese Komo		(papaksts, vārds, uzvārds)	Rodionova
TOWALAIS METROLOGIS	(signature and name			(signature and name)	
Izsniegšanas	datums: <u>2020</u>	. gada17.mari	ts		Lanca muga 1(2)
Date of issue	V AL				Lapas puse 1(2)

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KALIBRĒŠANAS SERTIFIKĀTS Nr. E0055KD20

Mērījumu rezultāti:

Measuring result

Lapas puse 2(2)

Page

Etalona vērtība	tahometra vidējie	Kļūda	Nenoteiktība	Nenoteiktība
rpm	rādījumi rpm	rpm	rpm	%
3	3.0	0.00	± 0.58	± 19.2
7	7.0	0.00	± 0.58	± 8.25
30	30.0	0.00	± 0.58	± 1.92
60	60.0	0.00	± 0.58	± 0.96
100	99.7	-0.33	± 0.90	± 0.90
250	249.5	-0.50	± 1.00	± 0.40
500	499.5	-0.50	± 1.04	± 0.21
		-		
		=		

^{* -} nav iekļauti akreditācijas sfērā not included in the scope of accreditation

Uzrādītā paplašinātā nenoteiktība ir mērījumu standartnenoteiktība, kas reizināta ar pārklāšanās koeficentu k=2, kura pie normālsadalījuma atbilst apmēram 95 % pārklāšanās varbūtībai. Mērījuma standartnenoteiktība noteikta saskaņā ar dokumentu EA-4/02 M:2013.

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Izpildītājs

Operator

E. Rodionova (paraksts, vārds, uzvārds)

(signature and name)



Fluke Corporation Instrument Test Certificate and Statement of Calibration Practices

The Fluke Corporation, ISO Certification No. U0018, hereby certifies that your product was calibrated in accordance with applicable Fluke calibration procedures during the manufacturing process. These processes are ISO-9001 controlled and are designed to assure that the instrument will meet its published specification.

The Fluke Corporation further certifies that the measurement standards and instruments used during the calibration of this meter are traceable to the United States National Institute of Standards and Technology (NIST). At planned intervals, Fluke's measurement standards are calibrated by comparison to or measurement against the standards of NIST.

Fluke guarantees that at the time of test your instrument met its published specifications. Detailed specifications are available in the User Manual and Specification Supplement. A certificate of traceability can be obtained by sending the meter to any Fluke Technical Service Center. A nominal fee is charged for this service.

Quality Assurance Manager



For Customer use only:

Because we use different delivery channels, you may have received a meter with a test certificate that is several weeks old. Our experience indicates the calibration of this product is not affected by storage prior to its initial receipt by the customer. Therefore, the recalibration of this unit should be based on when the product is put into service, plus the recommended calibration interval.

The recommended calibration interval for this instrument is 12 months and begins on the date of receipt by the customer For recalibration, please use our calibration services. Locations are listed at the WWW address below.

Please fill in appropriate dates as indicated:

Date Instrument Received:

5. 1. 202,

Date Calibration Due:

5. 11. 202

P/N 1589971 Rev. 1 6/2005 · PFDPM0000049 · 04/07

Fluke EuroPAT Autotest Report		, 1
Serial Number: ROB	5010002	
Model Number:	6200-2 Germany	
Firmware Versions:	1.1.0 / 3.4	
Timestamp:	19 Jun 2020 06	
Testbox:	5; Caldate 24 September 2019; Redbeard version 2.5.0.0	
Test Result:	PASS	

Mains Voltage 230V PASS Mains Voltage 195V PASS Mains Voltage 253V PASS Earth Bond 200mA 0R1 PASS Earth Bond 200mA 1R PASS Earth Bond 200mA 2R PASS Earth Bond 200mA 10R PASS Earth Bond 200mA 19R PASS Earth Bond 200mA 0CV PASS Earth Bond 10A 0R1 PASS Earth Bond 10A 1R PASS Earth Bond 10A 1R PASS Earth Bond 10A 1R PASS Earth Bond 10A 1PR PASS Earth Bond 10A 1PR PASS Earth Bond 10A 1PR PASS Insulation Resistance 100k PASS Insulation Resistance 1M PASS Insulation Resistance 10M PASS Insulation Resistance 280M PASS Insulation Resistance 0CV PASS Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage OCV PASS Substitute Leakage OCV PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	232.6 197.2 256.1 0.12 1.03 2 9.97 18.85 6.05387 0.1 1.01 1.98 9.96 18.88 110000 1.01e+06 1.01e+07 1.01e+08 2.77e+08 577.07 3e-05 0.00232 0.01592	227.7 193.2 250.2 0.06 0.94 1.89 9.56 18.2 4 0.06 0.94 1.89 9.56 18.2 80000 950000 950000 9.63e+06 9.17e+07 2.55e+08 505 -1e-06	235.7 199.9 258.8 0.13 1.09 2.11 10.42 19.78 10 0.13 1.09 2.11 10.42 19.78 10.09 2.11 10.42 19.78 1.09 2.11 10.42 19.78 1.09 2.11 10.42 19.78 10.00 2.11 10.42 19.78 10.00 2.11 10.42 19.78 10.00 2.11 10.42 19.78 10.00 2.11 10.42 19.78 10.00 1.06e+06 1.047e+07 1.079e+08 3.02e+08 600 5e-05	Volts Volts Volts Volts Ohms Ohms Ohms Ohms Ohms Ohms Ohms Ohm
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Earth Bond 200mA OCV Earth Bond 10A 0R1 PASS Earth Bond 10A 1R PASS Earth Bond 10A 2R PASS Earth Bond 10A 10R PASS Earth Bond 10A 10R PASS Earth Bond 10A 19R PASS Insulation Resistance 100k PASS Insulation Resistance 1M PASS Insulation Resistance 10M PASS Insulation Resistance 10M PASS Insulation Resistance 280M PASS Insulation Resistance OCV PASS Substitute Leakage 0m02 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5	6.05387 0.1 1.01 1.98 9.96 18.88 110000 1.01e+06 1.01e+07 1.01e+08 2.77e+08 577.07 3e-05 0.00232	4 0.06 0.94 1.89 9.56 18.2 80000 950000 9.63e+06 9.17e+07 2.55e+08 505 -1e-06	19.78 10 0.13 1.09 2.11 10.42 19.78 120000 1.06e+06 1.047e+07 1.079e+08 3.02e+08 600	Ohms Volts Ohms Ohms Ohms Ohms Ohms Ohms Ohms Ohm
Earth Bond 10A 0R1 PASS Earth Bond 10A 1R PASS Earth Bond 10A 2R PASS Earth Bond 10A 10R PASS Earth Bond 10A 19R PASS Earth Bond 10A 19R PASS Insulation Resistance 100k PASS Insulation Resistance 1M PASS Insulation Resistance 10M PASS Insulation Resistance 10M PASS Insulation Resistance 280M PASS Insulation Resistance OCV PASS Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	6.05387 0.1 1.01 1.98 9.96 18.88 110000 1.01e+06 1.01e+07 1.01e+08 2.77e+08 577.07 3e-05 0.00232	4 0.06 0.94 1.89 9.56 18.2 80000 950000 9.63e+06 9.17e+07 2.55e+08 505 -1e-06	10 0.13 1.09 2.11 10.42 19.78 120000 1.06e+06 1.047e+07 1.079e+08 3.02e+08 600	Ohms Ohms Ohms Ohms Ohms Ohms Ohms Ohms
Earth Bond 10A 1R Earth Bond 10A 2R Earth Bond 10A 10R Earth Bond 10A 10R Earth Bond 10A 19R Insulation Resistance 100k Insulation Resistance 1M Insulation Resistance 10M Insulation Resistance 10M Insulation Resistance 100M Insulation Resistance 280M Insulation Resistance OCV Substitute Leakage 0m02 Substitute Leakage 2m3 Substitute Leakage 15m6 Substitute Leakage OCV Contact Current 0m1 PASS PASS Contact Current 0m5 PASS	0.1 1.01 1.98 9.96 18.88 110000 1.01e+06 1.01e+07 1.01e+08 2.77e+08 577.07 3e-05 0.00232	0.94 1.89 9.56 18.2 80000 950000 9.63e+06 9.17e+07 2.55e+08 505 -1e-06	0.13 1.09 2.11 10.42 19.78 120000 1.06e+06 1.047e+07 1.079e+08 3.02e+08 600	Ohms Ohms Ohms Ohms Ohms Ohms Ohms Ohms
Earth Bond 10A 2R Earth Bond 10A 10R PASS Earth Bond 10A 19R PASS Insulation Resistance 100k Insulation Resistance 1M Insulation Resistance 10M Insulation Resistance 10M PASS Insulation Resistance 100M PASS Insulation Resistance 280M Insulation Resistance 280M PASS Insulation Resistance OCV PASS Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	1.98 9.96 18.88 110000 1.01e+06 1.01e+07 1.01e+08 2.77e+08 577.07 3e-05 0.00232	0.94 1.89 9.56 18.2 80000 950000 9.63e+06 9.17e+07 2.55e+08 505 -1e-06	1.09 2.11 10.42 19.78 120000 1.06e+06 1.047e+07 1.079e+08 3.02e+08	Ohms Ohms Ohms Ohms Ohms Ohms Ohms Ohms
Earth Bond 10A 10R PASS Earth Bond 10A 19R PASS Insulation Resistance 100k PASS Insulation Resistance 1M PASS Insulation Resistance 10M PASS Insulation Resistance 100M PASS Insulation Resistance 280M PASS Insulation Resistance 280M PASS Insulation Resistance OCV PASS Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	9.96 18.88 110000 1.01e+06 1.01e+07 1.01e+08 2.77e+08 577.07 3e-05 0.00232	1.89 9.56 18.2 80000 950000 9.63e+06 9.17e+07 2.55e+08 505 -1e-06	2.11 10.42 19.78 120000 1.06e+06 1.047e+07 1.079e+08 3.02e+08	Ohms Ohms Ohms Ohms Ohms Ohms Ohms Volts
Earth Bond 10A 10R PASS Earth Bond 10A 19R PASS Insulation Resistance 100k PASS Insulation Resistance 1M PASS Insulation Resistance 10M PASS Insulation Resistance 100M PASS Insulation Resistance 280M PASS Insulation Resistance 280M PASS Insulation Resistance OCV PASS Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	9.96 18.88 110000 1.01e+06 1.01e+07 1.01e+08 2.77e+08 577.07 3e-05 0.00232	9.56 18.2 80000 950000 9.63e+06 9.17e+07 2.55e+08 505 -1e-06	10.42 19.78 120000 1.06e+06 1.047e+07 1.079e+08 3.02e+08	Ohms Ohms Ohms Ohms Ohms Ohms Volts
Earth Bond 10A 19R PASS Insulation Resistance 100k PASS Insulation Resistance 1M PASS Insulation Resistance 10M PASS Insulation Resistance 100M PASS Insulation Resistance 280M PASS Insulation Resistance 280M PASS Insulation Resistance OCV PASS Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	18.88 110000 1.01e+06 1.01e+07 1.01e+08 2.77e+08 577.07 3e-05 0.00232	18.2 80000 950000 9.63e+06 9.17e+07 2.55e+08 505 -1e-06	19.78 120000 1.06e+06 1.047e+07 1.079e+08 3.02e+08	Ohms Ohms Ohms Ohms Ohms Ohms Volts
Insulation Resistance 1M PASS Insulation Resistance 10M PASS Insulation Resistance 100M PASS Insulation Resistance 280M PASS Insulation Resistance OCV PASS Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	110000 1.01e+06 1.01e+07 1.01e+08 2.77e+08 577.07 3e-05 0.00232	80000 950000 9.63e+06 9.17e+07 2.55e+08 505 -1e-06	120000 1.06e+06 1.047e+07 1.079e+08 3.02e+08 600	Ohms Ohms Ohms Ohms Ohms Volts
Insulation Resistance 10M PASS Insulation Resistance 100M PASS Insulation Resistance 280M PASS Insulation Resistance OCV PASS Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	1.01e+06 1.01e+07 1.01e+08 2.77e+08 577.07 3e-05 0.00232	950000 9.63e+06 9.17e+07 2.55e+08 505 -1e-06	1.06e+06 1.047e+07 1.079e+08 3.02e+08 600	Ohms Ohms Ohms Ohms Volts
Insulation Resistance 10M PASS Insulation Resistance 100M PASS Insulation Resistance 280M PASS Insulation Resistance OCV PASS Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	1.01e+07 1.01e+08 2.77e+08 577.07 3e-05 0.00232	9.63e+06 9.17e+07 2.55e+08 505 -1e-06	1.047e+07 1.079e+08 3.02e+08 600	Ohms Ohms Ohms Volts
Insulation Resistance 100M PASS Insulation Resistance 280M PASS Insulation Resistance OCV PASS Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	1.01e+08 2.77e+08 577.07 3e-05 0.00232	9.17e+07 2.55e+08 505 -1e-06	1.079e+08 3.02e+08 600	Ohms Ohms Volts
Insulation Resistance OCV PASS Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	2.77e+08 577.07 3e-05 0.00232	2.55e+08 505 -1e-06	3.02e+08 600	Ohm: Volts
Substitute Leakage 0m02 PASS Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	577.07 3e-05 0.00232	505 -1e-06	600	Volts
Substitute Leakage 2m3 PASS Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	3e-05 0.00232	-1e-06		
Substitute Leakage 15m6 PASS Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS	0.00232			
Substitute Leakage OCV PASS Contact Current 0m1 PASS Contact Current 0m5 PASS		0.00216	0.00239	Amps
Contact Current 0m1 PASS Contact Current 0m5 PASS	The state of the s	0.01508	0.01638	Amps
Contact Current 0m5 PASS	95.8335	84	116	Volts
	0.0001	8e-05	0.00012	Amps
	0.00051	0.00047	0.00053	Amps
Contact Current 3m PASS	0.00305	0.00292	0.00315	Amps
Leakage Current 0m1 PASS	0.00011	6e-05	0.00014	Amps
Leakage Current 0m5 PASS	0.00051	0.00045	0.00056	Amps
Leakage Current 10m PASS	0.01061	0.01016	0.01092	Amps
Leakage Current 18m PASS	0.01837	0.01766	0.01892	Amps
Load Current 0m46 PASS	0.4	0.3	0.6	Amps
Load Current 4m35 PASS	4.1	3.8	4.4	Amps
Load Current 12m5 PASS	12.2	11.6	12.7	Amps



SABIEDRĪBA AR IEROBEŽOTU ATBILDĪBU "LATVIJAS NACIONĀLAIS METROLOGIJAS CENTRS"

Reg. Nr. 40003435328, K. Valdemāra iela 157, Rīga, LV-1013, tālr.: 67378165 E-pasts: info@Inmc.lv, http://www.lnmc.lv

KALIBRĒŠANAS SERTIFIKĀTS Nr.E0011K22

CALIBRATION CERTIFICATE

Kalibrēšanas uzlīmes numurs 473946

Label of calibration



Mērlīdzekļa nosaukums	Daudzfunkcionālais elektroir	nstalācijas mēraparāts
Calibration item Tips $\underline{6200}$ Nr. $\underline{97}$ Type Serial No.	Mērdiapazons (0 – 19 Measuring range	.99) Ω; (0 – 299) MΩ;
Ražotājs Manufacturer		
Pasūtītājs Biosan, SIA Customer	п	·
Rātsupītrs ie	ela 7 k-2, Rīga, LV-1067, t.674261	37
Kalibrēšanas metode un nosacīj	dokumentācija	; ražotāja tehniskā
Calibration method and environmental con	nditions $t = 22.5 ^{\circ}C$; $GM = 43 \%$	
Kalibrēšanas datums	Sertifikāta izsniegšanas datums	Sertifikāts derīgs līdz
10.01.2022.	10.01.2022.	09.01.2024.
Date of calibration	Date of issue	Certificate applicable up to

Mērīšanas līdzeklis atbilst Ministru kabineta 2008. gada 25.augusta noteikumu Nr. 693 "Noteikumi par mērīšanas līdzekļu kalibrēšanu" pielikumā minētajām prasībām. Measuring instrument conform to the Regulation No. 693 of the Cabinet of Ministers of august 25, 2008 "Regulations for calibration of measurement".

Rezultāti: (skat. 2. lpp.)

Results

Izsekojamība

Kalibrators 5320A Nr.513040209, kurš izsekots līdz Čehijas metroloģijas

Traceability

institūta starptautiski atzītiem etaloniem; Pretestības mēru komplektsNr.3,

kurš izsekots līdz LATMB starptautiski atzītiem etaloniem.

Institūcijas vadītājs Head of Laboratory

Izpildītājs Operator

OVALAIS ME

(paraksts un tā atšifrējums t.27383828)

(signature and name)

(signature and name)

(paraksts un tā atšifrējums)

I.Dmitrijeva

MĒRĪJUMU REZULTĀTI:

Measurement results

Diapazons	Nominālā vērtība	Faktiskā vērtība	Nenoteiktība
	$0.1~M\Omega$	$0.10~M\Omega$	$\pm~0.24~k\Omega$
	$1 M\Omega$	$1.01~M\Omega$	$\pm~0.01~M\Omega$
$(0-299)M\Omega$	$5 M\Omega$	$5.00~M\Omega$	$\pm~0.06~M\Omega$
	$18~M\Omega$	$18.06~M\Omega$	$\pm~0.06~M\Omega$
	0.01 Ω	0.01 Ω	$\pm~0.048~\mu\Omega$
	0.1Ω	0.10Ω	$\pm 0.13 \ \mu\Omega$
$(0-19.99) \Omega$	1Ω	$1.03~\Omega$	$\pm~0.06~\Omega$
	10 Ω	9.99 Ω	$\pm~0.35~\Omega$
	18 Ω	17.97Ω	$\pm~0.35~\Omega$

Uzrādītā mērījuma paplašināta nenoteiktība ir noteikta kā mērījumu standartnenoteiktība, kas pareizināta ar pārklāšanās koeficentu k = 2.00, kura pie normālsadalījuma atbilst apmēram 95% pārklāšanās varbūtībai. Mērījuma standartnenoteiktība noteikta saskaņā ar dokumentu EA-4/02-M:2013.

The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2.00, which for a normal distribution corresponds to a coverage probability of approximation 95%. The Standard uncertainty of measurement has been determined in accordance with Publication EA-4/02-M:2013.

Izpildītājs Operator I.Dmitrijeva

(paraksts un tā atšifrējums) (signature and name)



ONALAIS METRO

(paraksts un tā atš frējums t.27383828)

(signature and name)

SABIEDRĪBA AR IEROBEŽOTU ATBILDĪBU "LATVIJAS NACIONĀLAIS METROLOĢIJAS CENTRS"

Reģ. Nr. 40003435328, K. Valdemāra iela 157, Rīga, LV-1013, tālr.: 67378165 E-pasts: info@Inmc.lv, http://www.lnmc.lv

KALIBRĒŠANAS SERTIFIKĀTS Nr.E0010K22

CALIBRATION CERTIFICATE

Kalibrēšanas uzlīmes numurs 473945

Label of calibration



I.Dmitrijeva

(paraksts un tā atšifrējums)

(signature and name)

			dzfunkcionālais elektroinstalācijas mēraparāts			
Calibration iten Tips 6200		O 1903024	Mērdiapazons (0-19	$.99) \Omega; (0-299) M\Omega;$		
Туре	Serial No.		Measuring range			
Ražotājs	Fluke					
Manufacturer	AA _					
Pasūtītājs	Biosan, SIA					
Customer	my Sylva V					
477	Rātsupītrs i	ela 7 k-2, R	īga, LV-1067, t.674261	37		
Kalibrēšana	s metode un nosacī	jumi L	NMC E3/2015; ražotāja	tehniskā dokumentācija		
Calibration meth	nod and environmental co	nditions t	= 22.5 °C; $GM = 43$ %	•		
Kalibre	ēšanas datums	Sertifikā	ta izsniegšanas datums	Sertifikāts derīgs līdz		
10.01.2022.		10.01.2022.		09.01.2024.		
Date	Date of calibration		Date of issue	Certificate applicable up to		
Rezultāti : Results	(skat. 2. lpp.)					
Izsekojamīb	oa <i>Kalibrators</i> 5	320A Nr.5	13040209, kurš izsekots	līdz Čehijas metroloģijas		
Traceability	institūta starp	otautiski atz	tītiem etaloniem;Pretestī	ības mēru komplektsNr.3,		
NR IEROBEZO	kurš izsekots līdz L	ATMB star	ptautiski atzītiem etalon	iem.		
ZY	Institucijas vadītāj	S	Izpildīt	ājs		
Seal NT/	Head of Laboratory	51	Operato	r		

"Sertifikātu aizliegts pavairot nepilnā apjomā bez kalibrēšanas laboratorijas rakstiskas atļaujas. Sertifikātā iekļautie rezultāti attiecas tikai uz kalibrējamo objektu. This certificate not be reproduced other than in full, except with the prior written approval of laboratory of LNMC. All measurement data applies only to the calibrated object."

MĒRĪJUMU REZULTĀTI:

Measurement results

Diapazons	Nominālā vērtība	Faktiskā vērtība	Nenoteiktība
	$0.1~M\Omega$	$0.10~M\Omega$	$\pm 0.24 \ k\Omega$
	$1~M\Omega$	$1.01~M\Omega$	$\pm~0.01~M\Omega$
$(0-299)M\Omega$	$5 M\Omega$	$5.00~M\Omega$	$\pm~0.06~M\Omega$
	18 MΩ	18.04 MΩ	$\pm~0.06~M\Omega$
	0.01 Ω	0.00Ω	\pm 0.048 $\mu\Omega$
(0-19.99) Ω	0.1 Ω	$0.01~\Omega$	$\pm 0.13 \mu\Omega$
	1Ω	0.92Ω	\pm 0.06 Ω
	10Ω	9.88 Ω	$\pm~0.35~\Omega$
	18 Ω	17.85 Ω	$\pm~0.35~\Omega$

Uzrādītā mērījuma paplašināta nenoteiktība ir noteikta kā mērījumu standartnenoteiktība, kas pareizināta ar pārklāšanās koeficentu k = 2.00, kura pie normālsadalījuma atbilst apmēram 95% pārklāšanās varbūtībai. Mērījuma standartnenoteiktība noteikta saskaņā ar dokumentu EA-4/02-M:2013.

The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2.00, which for a normal distribution corresponds to a coverage probability of approximation 95%. The Standard uncertainty of measurement has been determined in accordance with Publication EA-4/02-M:2013.

Izpildītājs Operator I.Dmitrijeva

(paraksts un tā atšifrējums)



SABIEDRĪBA AR IEROBEŽOTU ATBILDĪBU "LATVIJAS NACIONĀLAIS METROLOĢIJAS CENTRS"

Reģ. Nr. 40003435328, K. Valdemāra iela 157, Rīga, LV-1013, tālr.: 67378165 E-pasts: info@Inmc.lv, http://www.lnmc.lv

KALIBRĒŠANAS SERTIFIKĀTS Nr. E0314KD21

CALIBRATION CERTIFICATE

Kalibrēšanas uzlīme Nr. 479545

Label of calibration

	5007
Laboratorija Daugavpils nodaļa, Sakņu 16/18, Da Laboratory Daugavpils department, Saknu str. 16/18, Dau	
Mērlīdzekļa nosaukums Ta	hometrs
Calibration item	
Tips PeakTech 2790 Nr. 151122102	Mērdiapazons $(2 \div 99999) rpm$
	Measuring range
Ražotājs <i>PeakTech, Vācija</i>	
Manufacturer	
INT/VAG	
Pasūtītājs SIA "Biosan"	31 P (2016
Customer Rātsupītes iela 7 k-2, Rīga	
	D2/2016; ražotāja tehniskā dokumentācija
Calibration method and environmental conditions	40
$t(^{\circ}C) = 20.6$ $W(\%) =$	40
Kalibrēšanas datums: 2021. gada 30.decembri	is
JIQIN BETT	
Rezultāti: Skatīt 2. lpp.	
Results	
Izsekojamība: Darba etalons - frekvences ģenerators	Г3-110 Nr.3262; Iekārta УТО5-60 Nr.715
Traceatability Izsekojamība nodrošināta līdz Lietuvas	; frekvences etalonam (VMC).
Laboratorijas vadītāja p.i.	Izpildītājs
Head of Laboratory	Operator
A. Lebedeks (Species värds uzvärds t. 65420306)	As a second seco
A.Lebedeks	E. Rodionova
(paraksts. vārds. uzvārds, t. 65420306)	(paraksis, yards, uzvārds, t. 65476360)
transksts. värds. uzvārds, t. 65420306)	(signature and name)
Izsniegšanas datums: 2021. gada 30.decembr	is
Date of issue	Lapas puse 1(2)
77///	Page

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All measurement data applies only to the calibrated object.

KALIBRĒŠANAS SERTIFIKĀTS Nr. E0314KD21

Mērījumu rezultāti:

Measuring result

Lapas puse 2(2)

Page

Etalona vērtība	Tahometra vidējie	Kļūda	Nenoteiktība	Nenoteiktība
rpm	rādījumi, rpm	rpm	rpm	%
10	10.1	0.1	± 0.06	± 0.59
100	100.0	0.0	± 0.06	± 0.059
1000	1000.0	0.0	± 0.2	± 0.024
5000	5000.3	0.3	± 1.3	± 0.026
10000	10000.5	0.5	± 2.3	$\pm \ 0.023$
20000	20001.0	1.0	± 4.7	± 0.024
			4.	

Uzrādītā paplašinātā nenoteiktība ir mērījumu standartnenoteiktība, kas reizināta ar pārklāšanās koeficentu k=2, kura pie normālsadalījuma atbilst apmēram 95 % pārklāšanās varbūtībai. Mērījuma standartnenoteiktība noteikta saskaņā ar dokumentu EA-4/02 M:2013.

The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to a coverage probability of approximation 95%. The Standard uncertainty of measurement has been determined in accordance with Publication EA-4/02 M:2013.

Izpildītājs

Operator

E.Rodionova

(signature and name)

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