

# CALIBRATION CERTIFICATE

## Centre for Calibration

a unit of

**NAGMAN INSTRUMENTS & ELECTRONICS (P) LTD.**

Block 'B', "Nagman Complex" 27th KM Stone, Chennai - Bangalore NH4,

Nazarathpet (Via), Chembarambakkam, Chennai - 600 123. Tamilnadu.

Phone : 044 -26811710, 26811731 (Lab), Marketing : 044 - 2681 1776

Fax : 044 - 26811703 E-Mail : cfcchennai@nagman.com, calibration@nagman.com

Site : www.nagman-calibration.com



CFC / FT - 01/5.10

C-0162/C-0163/C-0164

**Job No :1390** **Certificate Number : 2016-17 / CFC / 16934**

**Customer Name and Address** M/s. EDACI,  
CNEL Lynch 2684 - San Justo,  
Buenos Aires - Argentina.

**Customer Reference** PO.NO: E-Mail Confirmation Dated : 08.08.2016

**Details of the Instrument**

**Description** Pressure Calibrator  
**Make** Nagman  
**Model** MPC-P+40  
**Serial number** MPC 1609 P0252  
**Identification Number** -  
**Range** -0.85 to 40 bar  
**Resolution** 0.001 bar  
**Accuracy** ± 0.025%FS  
**Electrical Parameters**  
**mA Range** 0 to 50 mA(Active)/ 0 to 25 mA(Passive)  
**Voltage Range** 0 to 30 V  
**Accuracy** ± 0.025%FS  
**Equipment recived on** 28.09.2016  
**Condition of the equipment on receipt** Good  
**Calibration procedure number** CFC/WI-M03,E05  
**Date of calibration** 28.09.2016  
**Date of next calibration suggested** 28.09.2017

**Calibration environments**

**Temperature** 23°C±2°C  
**Relative humidity** 35% to 65%  
**Acceleration due to Gravity** 9.78244215 m/sec<sup>2</sup>

**Master Instrument Details**

	Master - I	Master - II	Master - III
<b>Description</b>	Piston Cylinder	Dead Weight Tester	Pressure Calibrator
<b>Make</b>	Fluke	Pressurements	WIKA(Mensor)
<b>Type / Model</b>	PPA9566	M2800	2500
<b>Serial number</b>	L-409	H895	720571
<b>Report Number</b>	1500159310	1500159288	1370
<b>Calibration valid till</b>	10/01/2017	09/01/2017	20/09/2017

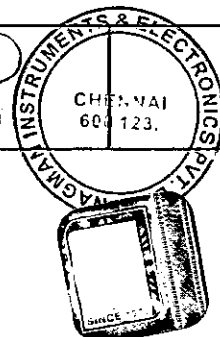
**Master Instrument Details**

	Master - IV	Master - V
<b>Description</b>	Multi Product Calibrator	Multifunction Calibrator
<b>Make</b>	Transmille	Eurotron Instruments, Italy
<b>Type / Model</b>	3010A	Microcal 200+
<b>Serial number</b>	J1130K11	83403
<b>Report Number</b>	30768	2015-16/CFC/MASTER/245
<b>Calibration valid till</b>	04/05/2017	19/01/2017

**The Standards used are traceable to National / International Standards**

Checked by  P. Raju  
Team Member

Authorised Signatory  A. Manivannan  
Team Leader



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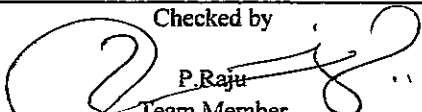
### CALIBRATION DATA

#### 1. Pressure

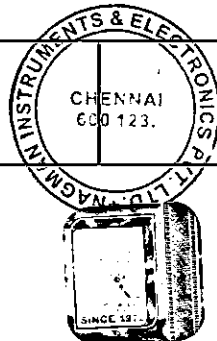
Standard Reading	Test Reading (UUC) (Mean)	Deviation	Deviation Allowed ( $\pm$ )	Expanded Uncertainty ( $\pm$ )	Coverage Factor $k$
bar	bar	bar	bar	bar	
0.00000	0.000	0.0000	0.01	0.00058	2.00
4.00014	4.001	0.0009	0.01	0.00099	2.00
8.00019	8.001	0.0008	0.01	0.00170	2.00
11.99985	12.001	0.0011	0.01	0.00247	2.00
15.99974	16.001	0.0013	0.01	0.00325	2.00
20.00001	20.002	0.0020	0.01	0.00404	2.00
24.00012	24.004	0.0039	0.01	0.00484	2.00
27.99983	28.002	0.0022	0.01	0.00563	2.00
32.00021	32.004	0.0038	0.01	0.00643	2.00
35.99976	36.003	0.0032	0.01	0.00722	2.00
39.99981	40.005	0.0052	0.01	0.00802	2.00

#### 2. Vacuum

Standard Reading	Test Reading (UUC) (Mean)	Deviation	Deviation Allowed ( $\pm$ )	Expanded Uncertainty ( $\pm$ )	Coverage Factor $k$
bar	bar	bar	bar	bar	
0.00000	0.000	0.000	0.01	0.00058	2.00
-0.10000	-0.100	0.000	0.01	0.00058	2.00
-0.20000	-0.200	0.000	0.01	0.00058	2.00
-0.30000	-0.300	0.000	0.01	0.00058	2.00
-0.40000	-0.400	0.000	0.01	0.00058	2.00
-0.50000	-0.500	0.000	0.01	0.00059	2.00
-0.60000	-0.600	0.000	0.01	0.00059	2.00
-0.70000	-0.700	0.000	0.01	0.00059	2.00
-0.80000	-0.800	0.000	0.01	0.00060	2.00
-0.85000	-0.851	-0.001	0.01	0.00060	2.00

Checked by   
P. Raju  
Team Member

Authorised Signatory   
A. Manivannan  
Team Leader



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### CALIBRATION DATA

#### 3. Voltage Scale

Standard Reading	Test Reading (UUC) (Mean)	Deviation	Deviation Allowed ( $\pm$ )	Expanded Uncertainty ( $\pm$ )	Coverage Factor $k$
V	V	V	V	V	
0.1000	0.100	0.000	0.0075	0.0006	2.00
7.5000	7.497	-0.003	0.0075	0.0009	2.00
15.0000	14.996	-0.004	0.0075	0.0016	2.00
22.5000	22.498	-0.002	0.0075	0.0023	2.00
30.0000	29.998	-0.002	0.0075	0.0031	2.00

#### 4. mA Scale (Active)

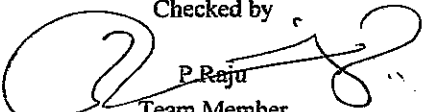
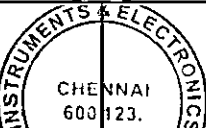

Standard Reading	Test Reading (UUC) (Mean)	Deviation	Deviation Allowed ( $\pm$ )	Expanded Uncertainty ( $\pm$ )	Coverage Factor $k$
mA	mA	mA	mA	mA	
0.2000	0.201	0.001	0.0125	0.0012	2.00
12.5000	12.499	-0.001	0.0125	0.0625	2.00
25.0000	25.001	0.001	0.0125	0.1250	2.00
37.5000	37.502	0.002	0.0125	0.1875	2.00
50.0000	49.999	-0.001	0.0125	0.2500	2.00

#### 5. mA Scale (Passive)

Standard Reading	Test Reading (UUC) (Mean)	Deviation	Deviation Allowed ( $\pm$ )	Expanded Uncertainty ( $\pm$ )	Coverage Factor $k$
mA	mA	mA	mA	mA	
0.2000	0.200	0.000	0.0063	0.0012	2.00
6.2500	6.252	0.002	0.0063	0.0313	2.00
12.5000	12.500	0.000	0.0063	0.0625	2.00
18.7500	18.752	0.002	0.0063	0.0938	2.00
25.0000	25.002	0.002	0.0063	0.1250	2.00

#### Remarks:-

1. The above UUC is Calibrated at Lab.
2. UUC Is defined as Unit Under Calibration.
3. Switch Test Found O.K.
4. The measurement confidence level is 95.45%
5. The Calibration Certificate shall not be reproduced except in full without written approval of CFC.
6. The above Expanded Uncertainty includes Repeatability, Hysteresis, Resolution & Uncertainty of Measurement.
7. The above results relate only to the item calibrated.
8. The above UUC has been calibrated at 40 bar by using liquid separator in our hydraulic system.

Checked by  P. Raju Team Member	 CHENNAI 600 123.	Authorised Signatory  A. Manivannan Team Leader
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