



MTS Systems Corporation

Calibration Laboratory

14000 Technology Drive
Eden Prairie, MN 55344

Certificate of Calibration

For MTS Asset Number: SN262200

Description: PRESSURE TRANSDUCER

Mfr / Model: MTS/660.23A-02

Serial Number: 262200

Certificate #: SN262200:1312989879

Customer: EUCENTRE

Job #: US2.43227

This document applies only to the calibration of the item described above and the specific calibration performed by the MTS Calibration Laboratory. If shown below, the calibration interval has been requested or agreed upon by the customer. When declaring in tolerance or out of tolerance condition(s) the MTS Calibration Laboratory utilizes the Shared Risk Method* as the decision rule. The stability of the UUT over time depends on many factors outside our control. It is the responsibility of those using the item described above to quantify their measurement uncertainty and evaluate the adequacy of their measurement process to demonstrate that measurement traceability is credibly maintained.

The MTS Metrology and Calibration Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA) to perform calibration in time/frequency, electrical, mechanical, dimensional, temperature/humidity, vibration, and acoustics. The basis for this accreditation is the international standard for calibration laboratories, ISO/IEC 17025 "General requirements for the competence of calibration and testing laboratories". Although the MTS Metrology and Calibration Lab is accredited, this calibration is not covered within our current scope of accreditation or the customer has requested a non-accredited calibration.

MTS Calibration Laboratory measurement standards, calibration processes, and measurement results are traceable to the International System of Units (SI Unit) through one or more of the following: National Institute of Standards and Technology (NIST), other National Metrology Institutes (NMI's), natural physical constants, consensus standards or by a ratio technique.

CALIBRATION INFORMATION

Received: IN TOLERANCE

Calibration Date: (mmddyyyy) 08/10/11

Temperature: 69°F

Returned: IN TOLERANCE

Humidity: 42 %

Calibration Procedure: 1504

Procedure Revision: B

Note: NONE

STANDARDS USED FOR CALIBRATION

MTS Asset #	Description	Cal. Date	Cal. Due
14118	PRESSUREMENTS, M2200/3M, PRESSURE STANDARD	11/16/10	11/16/11
17431	MTS, 493.25, SIGNAL CONDITIONER	03/05/11	03/05/12

Certified by: Yadessa Tikure, Calibration Technician

Printed on: 08/10/2011

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If you have questions regarding this Certificate of Calibration please call 952-937-4133. This certificate may not be reproduced, except in full, without written approval from the MTS Calibration Laboratory.
MTS Calibration Form (Rev. 9/10)

*When parameter(s) are certified to be within specified tolerance(s), the measured value(s) shall fall within the appropriate specification limit and the uncertainty of the measured value shall be stated and provided to the customer for evaluation. With written agreement from the customer, other decision rules may be used.



MTS CALIBRATION LABORATORY

PRESSURE CALIBRATION REPORT

MANUFACTURER:	MTS	CUSTOMER NAME:	EUCENTRE
MODEL NUMBER:	660.23A-02	MTS PROJECT / JOB:	43227
SERIAL NUMBER:	262200	CALIBRATION DATE:	10-Aug-11
MTS ASSET NUMBER:	SN262200	TEMP. / HUMIDITY:	69°F / 42%
		CERTIFIED BY:	Yadessa Tikure

CALIBRATION CONFIGURATION

The calibration data shown below is valid only when used with the following MTS configuration and signal conditioner settings:

Calibration Engineering Unit:	MPa	Polarity:	Normal
Transducer FS Capacity:	5000 psi	Cal Type:	Gain/Delta K
MTS Calibration FS Range:	21 Mpa	Total Gain:	836.49
MTS Conditioner Model:	493.25	Excitation:	10.000
Conditioner Mode:	4 Wire DC	Delta K:	1.0000
Cable Length:	150 FT	Zero:	-0.058

CALIBRATION AND PERFORMANCE DATA

	Nominal % of Range	Applied Pressure (psi)	Equivalent Pressure (MPa)	Conditioner Display (MPa)	Display Deviation (% Rdg)	Display Tolerance (% Rdg)
P1	100	3040	20.9601	21.0390	0.38	± 1.00
P1	70	2140	14.7548	14.8151	0.41	± 1.00
P1	40	1220	8.4116	8.4409	0.35	± 1.00
P1	20	600	4.1369	4.1454	0.21	± 1.00
P1	10	305	2.1029	2.1022	-0.03	± 1.00
P1	8	244	1.6823	1.6798	-0.15	± 1.00
P1	6	183	1.2617	1.2597	-0.16	± 1.00
P1	4	122	0.8412	0.8387	-0.29	± 1.00
P1	2	61	0.4206	0.4193	-0.30	± 1.00
	0%	0.0	0.0	0.0000	N/A	N/A
P2	2	-61	-0.4206	-0.4195	-0.26	± 1.00
P2	4	-122	-0.8412	-0.8389	-0.27	± 1.00
P2	6	-183	-1.2617	-1.2604	-0.11	± 1.00
P2	8	-244	-1.6823	-1.6801	-0.13	± 1.00
P2	10	-305	-2.1029	-2.1011	-0.09	± 1.00
P2	20	-600	-4.1369	-4.1485	0.28	± 1.00
P2	40	-1220	-8.4116	-8.4491	0.45	± 1.00
P2	70	-2140	-14.7548	-14.8244	0.47	± 1.00
P2	100	-3040	-20.9601	-21.0541	0.45	± 1.00

Shunt Resistor:	(kOhm)	Shunt Reference:	(MPa)
	100		16.943

NOTES:

Final calibration data, no MTS Delta K or Linearization correction factors applied.

REMARKS:

- 1) MTS Calibration Laboratory pressure calibration uncertainty: $\pm 0.2\%$ ($k=2$) of applied pressure.
- 2) This report shall not be reproduced, except in full, without written approval from the MTS Calibration Laboratory.