


Schedule of Accreditation

issued by
United Kingdom Accreditation Service
21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

 Accredited to ISO/IEC 17025:2005	Yadav Measurements Private Limited	
	Issue No: 020 Issue date: 16 April 2012	
	Post Box 169 Plot No. 373 - 375 Riico Bhamashah Industrial Area Kaladwas Udaipur 313 003 India	Contact: Mr B. M. Vyas Tel: +91 294 265 0127 Fax: +91 294 265 0129 E-Mail: yadav.measurements@ymllabs.com Website: http://www.ymllabs.com
Testing performed at the above address only		

Flexible Scope

The laboratory is accredited to ISO/IEC17025:2005 for testing activities in accordance with the standards listed in the schedule. This may also include tests on the same or similar product types against standards, or customer-specified methods, that are not specifically listed in this Schedule, providing that:

- (1) The method or standard does not introduce new principles of measurement.
- (2) The method or standard does not require measurements to be made outside the parametric boundaries defined in this Schedule.

Information about flexible scopes of accreditation is available in UKAS document LAB39 and EA document EA-2/05.

NOTES

The abbreviation IS refers to Indian Standards and the abbreviation CBIP refers to the Central Bureau of Irrigation and Power, Government of India.

Tests carried out to IS13779:1999 include Amendment 1 (October 2003), Amendment 2 (October 2004), Amendment 3 (December 2004) and Amendment 4 (June 2006)

Tests carried out to IS14697:1999 include Amendment 1 (October 2003), Amendment 2 (October 2004) and Amendment 3 (December 2004).

Tests carried out to IS13779:1999 and IS14697:1999 include the reaffirmation of those standards that were carried out in 2004.

Tests carried out to CBIP 88:February 2002 include Amendment 4 (2005).

Publication No. 304 is dated 2008 and is published by CBIP.



2437
Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

Yadav Measurements Private Limited
Issue No: 020 Issue date: 16 April 2012

Testing performed at main address only

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Static Watthour and VAR hour meters, including prepayment meters	<p>AC Voltage test <i>1 kV to 6 kV</i></p> <p>Insulation Resistance Test <i>Up to 100 MΩ</i> <i>Test Voltage: 500 V dc</i></p> <p>Impulse Voltage Test <i>0.5 kV to 12 kV</i></p> <p>Limits of Errors Meter Constant Starting Conditions Ambient Temperature Influence Repeatability of errors test Test of power consumption <i>Upper limits are 100 VA for the current circuit and 10W or 50 VA for the voltage circuit</i> Influence of Self Heating Influence of Heating Immunity to Earth Fault test/abnormal voltage condition</p> <p><i>Single Phase: 0.04 W to 38.4kW</i> <i>Three Phase: 0.12 W to 115.2kW</i> <i>30 V to 320 V</i> <i>1 mA to 240 A</i></p> <p>Start Up Test of energy meters <i>30 V to 320 V</i></p> <p>No load condition <i>30 V to 320 V</i></p> <p>Short time over voltage test</p> <p>Spring and pendulum hammer tests <i>0.20 Nm, 0.22 Nm, 0.35 Nm, 0.50 Nm, 0.70 Nm, 1.00 Nm</i></p> <p>Resistance to heat and fire <i>Up to 1000 °C</i></p> <p>Tests of effect of voltage dips and short interruptions / influence of supply voltage <i>At 63.5 V, 110 V and 240 V; 50Hz</i></p>	<p>IS13779 AMD 4 (JUNE 2006)</p> <p>IS14697 AMD 3 (DEC 2004)</p> <p>IS15884:2010 (exclude STOC)</p> <p>IS 11000 part I & II (1984)</p> <p>IEC 61268 (1995) IEC62052-11 (2003) IEC62053-21 (2003) IEC62053- 22 (2003) IEC 61000-4-5(1995) IEC 60060-1 (1989) IEC 61000-4-5 (2005) IEC62053-23(2003) IEC 61268 (1995) IEC 62053-61: 1998 IEC62052-21:2004 IEC 60601-1-2: 2001 IEC62055- 31:2005 IEC62053- 23 (2003) IEC 60687 (1992) IEC 60687 (1993) IEC 61036 (2000) IEC 61036 (1997) IEC 60695-2-10(2000) IEC 60695-2-11(2000) IEC 60529 (1989)</p> <p>BS EN 62053 -21:2003 AS 62053.22 (2005) BS EN 62053 -22:2003 BS EN 62053 -23:2003 BS EN 60687:1993 BS EN 61036:1997 BS EN 62052- 11:2003 BS EN 62052- 21:2004 AS 62053.23(2006) AS 62052-21:2006 AS 62052-21:2005 AS 62052-21:2004 AS 62052.11 (2005) AS1284.5 (2000) AS1284.9 (1993) AS 62053 -22 (2005) AS 62054.21 (2006) AS 62053.21 (2005) EN50470 -1:2006 EN50470 -3:2006 EN60068-2-75(1997) NMI M6 (2010) CBIP- 88 (February 2002) CBIP,Publication No.304</p> <p>SPM1618</p>



2437
Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

Yadav Measurements Private Limited
Issue No: 020 Issue date: 16 April 2012

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
	<p>Interpretation of test results and adjustments Test of influence quantities Single Phase: 0.04 W to 38.4 kW Three Phase: 0.12 W to 115.2 kW Voltage variation, Frequency Variation, Reverse phase sequence, Voltage unbalance, Auxiliary voltage, Harmonic components in current and voltage circuits, 10 percent of third harmonics, Sub-harmonics in a.c. circuit Continuous magnetic induction of external origin Continuous abnormal magnetic induction of external origin Magnetic induction of external origin DC and even harmonics in AC circuit Odd harmonics in AC circuit Operation of accessories Abnormal AC magnetic induction of external origin (10mT, 200mT)</p> <p>Short time over current test 20 A to 7000 A</p> <p>Short time over current test only up to 1000 A for up to 25 cycles and up to 7000 A (½ cycles)</p> <p>Surge Immunity Test 0.5 kV to 12 kV</p> <p>Electrical fast transient burst test 0.5 kV to 4.0 kV</p>	



2437

Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

Yadav Measurements Private Limited

Issue No: 020 Issue date: 16 April 2012

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
	<p>General and constructional / Mechanical requirements</p> <p>General: Meter case Display of measured values Output device Window Terminal: Terminal block(s) - Protective earth terminal, including heat deflection test Terminal cover(s) Clearance and creepage distances Insulating encased meter of protective class II Marking of meters</p> <p>Conducted Radio Interference Emissions Measurement <i>Frequency Range</i> <i>0.15 MHz to 30 MHz</i> <i>0 to 137 dBµV</i></p> <p>Test of immunity to conducted disturbances, induced by radio frequency fields <i>Frequency range 150 kHz to 80 MHz</i> <i>EMF: 10 V rms</i></p> <p>Immunity to electromagnetic HF field <i>Frequency Range: 80 MHz to 3GHz</i> <i>Field strength: 30 V/m</i></p> <p>Radiated Emissions Measurement <i>Frequency Range: 30 MHz to 6GHz</i> <i>Range: 0 to 137 dBµV</i></p> <p>Damped oscillatory wave immunity test</p> <p>Immunity to Electrostatic Discharge</p> <p>Immunity to power frequency magnetic fields of external origin</p>	



2437

Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

Yadav Measurements Private Limited

Issue No: 020 Issue date: 16 April 2012

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
	<p>Dry Heat Test <i>Ambient to +120 °C</i></p> <p>Cold Test <i>Ambient to - 40 °C</i></p> <p>Damp Heat Cyclic test <i>Temperature + 20 °C to + 70 °C</i> <i>Relative Humidity 30 % to 98 %</i></p> <p>Operation within the specified operation range</p> <p>Operation within the limit range of operation</p> <p>Storage and transport outside the limit range of operation</p> <p>load switching capability</p> <p>Token carrier interface</p> <p>Vibration test <i>Sweep frequency: 10 Hz to 3 kHz</i> <i>Displacement:</i> <i>20 mm p-p Capacity 400 kgf</i></p> <p>Protection against dust and water IPX1, IPX2, IPX3, IPX4 and IP5X without suction.</p> <p>Shock test <i>Peak acceleration: 50 g</i> <i>Half sine pulse</i> <i>Time duration: 11 ms and 18 ms</i></p> <p>Requirement of time keeping Test of keeping time Test of consumption based charging functions Test of time-based charging functions Functional requirements - General - Robustness of meter accounting process</p>	



2437

Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

Yadav Measurements Private Limited

Issue No: 020 Issue date: 16 April 2012

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Signalling equipment on low voltage electrical installations	Band in use condition Output signal measurement Limits of disturbance power Conducted disturbance test Allowed use of the sub band Transmitter output voltage Maximum output levels Inadvertent operation Marking Radio Frequency Electromagnetic Field (Amplitude and pulse modulation) Electrostatic Discharges RF Common mode AM Power frequency Magnetic field Fast Transients and surges Narrow band conducted interference	EN50065-1:2001 EN50065 -2-2: 2003 + A1:2005 EN50065 -2-3: 2003 +A1:2005 EN50065-2-1: 2003 + A1:2005
Tariff and load control equipment	Electrical requirements and tests Supply frequency range Output elements	AS62052-21:2006



2437

Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

Yadav Measurements Private Limited
Issue No: 020 Issue date: 16 April 2012

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Measuring Instruments - Electrical measuring transducers	Environmental condition test Variations due to Auxiliary Supply Voltage Variations due to Auxiliary Supply frequency Variations due to Ambient Temperature Variations due to the frequency of the input quantities Variations due to input Voltage Variations due to input Current Variations due to power factor Variations due to output load Variations due to distortion of the input quantities Variation due to magnetic fields of external origin Variation due to unbalanced currents Variation due to the interaction between measuring elements Variation due to self-heating Variation due to continuous operation Permissible excessive inputs Continuous excessive inputs Excessive inputs of short duration Variation due to common mode interference Variation due to series mode interference Test of limits of Intrinsic Error Marking Drop and Topple Test Test for temperature rise Limiting condition for storage and transport (up to 80 °C) Response time (up to 700 ms) Limiting value of output (0 V to 320 V, 0 A to 120 A) Sealing verification Ripple content of output (0 V to 320 V, 0 A to 120 A) Over range of measurand (0 V to 320 V, 0 A to 120 A) Impulse voltage tests High frequency disturbance test Voltage test, insulation tests and other safety requirements	IEC 60068-2-3 (1985) IEC 60688 (2002) IS 12784 part 1 (1989) IEC 60521 (1988) IEC 61000-4-12 (1995) IEC 61010-1(2001)



2437

Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

Yadav Measurements Private Limited
Issue No: 020 Issue date: 16 April 2012

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
	<u>EMC Tests</u>	
Computers and Peripherals Domestic Appliances: Electrical/Electronic/Electronic Components Electrical/Electronic Connectors Electrical/Electronic Products Electronic Products: Digital Electro-Mechanical Devices IT Equipment Luminaires Micro-electronic Circuits and Components Office Equipment: Electrical Printed Circuit Boards Electrical equipment for measurement, control and laboratory use Audio, Video and similar electronic apparatus Instruments: Indicating/ Recording Medical & Diagnostic Instruments	Conducted Radio Interference Emissions Measurement <i>Frequency Range</i> 0.15 MHz to 30 MHz 0 dBµV to 137 dBµV Radiated Emissions Measurement <i>Frequency Range: 30 MHz to 6GHz</i> Disturbance power measurement (Absorbing clamp – 30 MHz to 300 MHz) Immunity to Electrostatic Discharge Immunity to electromagnetic HF field <i>Frequency Range: 80 MHz to 3 GHz</i> <i>Field strength: 30 V/m</i> Electrical fast transient burst test <i>0.5 kV to 4.0 kV</i> <i>Range: 0 dBµV to 137 dBµV</i>	EN55022:2006 EN55022:2006 +A1:2008 CISPR 22 (1997/2006) CISPR 16 -2-1:2008 EN55011:2007 IS 6842 (1997) IS 6873 (part2) :1999 EN55022:2006 EN55022:2006 +A1:2008 CISPR 22 (1997/2006) CISPR 16 -2-3 IS 6842 (1997) IS 6873 (part2) :1999 EN55011:2007 CISPR 14 (1993) CISPR 14- 1(2005) IEC 61000-4-2 (2008) EN 61000-4-2 (1995) IEC 61000-4-3 (2002) IEC 61000-4-3 (2006) EN 61000-4-3 (2002) IEC 801-3 (1984) IEC 61000-4-4 (1995/2004)
Measuring Instruments – Electrical measuring transducers	Surge Immunity Test <i>0.5 kV to 12 kV</i>	IEC 61000-4-5 (1995/2005)
Flow/Gas meters	Test of immunity to conducted disturbances, induced by radio frequency fields <i>Frequency range: 150 kHz to 80 MHz</i> <i>EMF: 10 V rms</i> Immunity to power frequency magnetic fields of external origin Damped oscillatory wave immunity test	IEC 61000-4-6 (1996/2006) IEC 61000-4-8 (2001) EN 61000-4-8 (2001) IEC61000-4-12 (1995)



2437
Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

Yadav Measurements Private Limited
Issue No: 020 Issue date: 16 April 2012

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
	<p align="center"><u>EMC Generic & product specific standards.</u> <u>These are accredited to the extent that the basic standards are included above</u></p> <p align="center"><u>Climatic Tests</u></p> <p>Dry Heat Test <i>Ambient to +120 °C</i></p> <p>Cold Test / resistance to storage temperature range <i>Ambient to - 40 °C and + 60 °C</i></p> <p>Damp Heat Cyclic / resistance to external humidity test <i>Temperature + 20 °C to + 70 °C</i> <i>Relative Humidity 30 % to 98 %</i></p> <p align="center"><u>Mechanical Tests</u></p> <p>Vibration test <i>Sweep frequency: 10 Hz to 5 kHz</i> <i>Displacement: 20 mm p-p</i> <i>Capacity: 400 kgf</i></p> <p>Shock test <i>Peak acceleration: 50 g, Half sine pulse</i> <i>Time duration: 11 ms and 18 ms</i></p>	<p>IEC 60688 (2002) EN55024:1998 IEC60601- 1-2:2001 EN 14236 (2007) IEC 60601 -1:2001 EN 1359 (1999) IEC61326 - 1:2005 EN 61000- 6-1 IEC61000- 6-1(2003) EN 61000- 6-2 IEC 61000- 6-2(2005) CISPR 11(2004) IEC61000- 6-3(2006) BS EN 62052-21:2004 IEC61000- 6-4(2006) IS 12784 part 1 (1989) IEC 62055-31:2005 IEC 62052-21:2004</p> <p>IEC 60068-2-2 (1994) IS9000(part3/Sec1to5) (1977)</p> <p>IEC 60068-2-1 (1994) IS9000 (part2/Sec1 to 4) (1997)</p> <p>IEC 60068-2-30 (1980) IS9000 (part5/Sec 1 to 2) (1981)</p> <p>IEC 60068-2-6 (1995) IS9000 (part 8) :1987</p> <p>IEC 60068-2-27 (1987) IS9000(part7/Sec 1 to 5) (1979)</p>



2437

Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

Yadav Measurements Private Limited

Issue No: 020 Issue date: 16 April 2012

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>Particular requirement for time switches (synchronized & crystal controlled)</p>	<p>Protection against dust IP5X, without suction Protection against water IPX1, IPX2, IPX3 and IPX4, without suction.</p> <p>Glow wire test/Resistance to heat and fire</p> <p>Spring and Pendulum Hammer Test</p> <p><u>Insulation Test</u> High voltage testing</p> <p>Variation of the supply frequency 45 Hz to 65Hz <i>Single phase: 0.04 W to 38.4 kW</i> <i>Three Phase: 0.12 W to 115.2 kW</i></p> <p>Immunity to DC magnetic fields <i>1000 AT, 67 mT to 0.27 T</i></p> <p>Immunity to AC magnetic fields <i>0.5 mT</i></p> <p>Voltage dips and short interruptions <i>100 ms, 200 ms, 500 ms, 1 s and 2 s</i></p> <p>Tests of effects of supply interruptions on synchronous time switches (except 20ms and 50ms of clause number 7.6.8.2) <i>Voltage 320 V_{p-n}</i></p> <p>Long interruptions of supply voltage <i>Time up to 6 hours</i> <i>Voltage up to 320 V_{p-n}</i></p>	<p>IEC 60529 (1989) IS 12063(1987)</p> <p>IEC Pub 695-2-1 (1980) IS:11000 (Part2/sec 1) (1984)</p> <p>IEC60068-2-75 (1997-05)</p> <p>IS 2071 (part 1) :1974 IEC 60060-1 (1989)</p> <p><u>Generic & product specific standards. These are accredited to the extent that the basic standards are included above</u></p> <p>IEC 60688 (2002) EN 14236 (2007) IEC60601- 1-2:2001 EN 1359 (1999) IEC 60601 -1:2001 IEC61326 - 1:2005 IS 12784 part 1 (1989) IEC 62055-31:2005 IEC 62052-21:2004</p> <p>AS62052-21:2006 AS 62054.21(2006)</p>



2437

Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

Yadav Measurements Private Limited

Issue No: 020 Issue date: 16 April 2012

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
	<p>Operation reserves <i>Time up to 36 hours</i> <i>Voltage up to 320 V_{p-n}</i></p> <p>Backup power supply replacement <i>Time < 5 minutes</i></p> <p>Functional requirements and test accuracy <i>-time setting and programming</i> <i>- time switches with mechanical analogic dials</i> <i>- time switches with digital displays</i></p> <p>Time keeping accuracy <i>Time up to 30 days</i> <i>Voltage up to 320 V_{p-n}</i></p> <p>Requirement for synchronous time and crystal switches - test of time keeping accuracy <i>- test of synchronous and crystal controlled time switches</i> <i>- test of synchronous and crystal controlled time switches on operation reserve</i></p> <p>Test of time keeping accuracy of crystal-controlled time switches with temperature <i>Frequency: 45 Hz to 65 Hz</i> <i>Single phase: 0.04 W to 38.4 kW</i> <i>Three Phase: 0.12 W to 115.2 kW</i> <i>Temperature -10 °C to + 40 °C</i></p> <p>Switching accuracy <i>time up to 168 hours</i> <i>- test on time switches with dials</i> <i>- test on time switches with digital displays</i> <i>- synchronization (time up to 1 minute)</i></p> <p>Test of influence of harmonics <i>Single phase: 0.04 W to 38.4 kW</i> <i>Three Phase: 0.12 W to 115.2 kW</i> <i>Time up to 30 days</i></p>	

--- END OF SCHEDULE ---