Certificate of Calibration

Manufacturer **Radian Research, Inc.**
Instrument Model: **RX-10 Xytronic Portable Standard**
Serial Number XXXXXX
Firmware Revision: 12.01.01
Error Specification 0.04% worst case

ISO 9001:2015 Certified Quality Management System
ISO/IEC 17025:2017 Accredited Laboratory

Customer Name: Radian Research, Inc.
Address: 3852 Fortune Drive
Lafayette, IN 47905
Calibration Lab Name: Radian Research, Inc.
Calibration Lab Address: 3852 Fortune Drive, Lafayette, IN 47905, USA
Calibration Date: 16-Oct-26
Report Issue Date: 16-Oct-26

Environmental Conditions
Temperature: 23ºC +/- 2ºC
Humidity: between 30% and 60%

CE Number: CE1234
P.O.Number: PO5678

Physical Condition: Undamaged
Radian Research's As-Found Test Results showed this Instrument to be:
[X] New [ ] In Tolerance [ ] Out of Tolerance [ ] Inoperative [ ] Limited Calibration

Radian Research, Inc. certifies the instrument listed above meets or exceeds specifications and was calibrated in compliance with ANSI/NCSL Z540-1-1994 “Calibration Laboratories and Measuring and Test Equipment – General Requirements” using applicable Radian Research procedures which meet the requirements of ISO 9001:2015 and ISO/IEC Guide 98-3 “Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)”.

This instrument was calibrated by a Radian Research RS-933 Syntron Automated Calibration System which is traceable to the National Institute of Standards and Technology (NIST) and/or other National Metrology Institute (NMI). The Automated Calibration system is cross checked and calibrated on a schedule which is adjusted to maintain required accuracies and traceability. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2.

Procedure used for Calibration: 9912408
Software used for Calibration: Radian Research RS-933 Control Application Version 2.6.8312.21655
RS-933 Tool Number: 9911149

Standards Used in This Calibration:

Description	Serial Number(s):	Cal. Source	Cal. Number:	Cal. Due Date:
RS-940B Data Collection Module	933159	Radian Research	933159-20260413	4/13/2027
RS-711 Syntron with RS-932 Boost Module (Phase A)	703187	Radian Research	703187-20260313	3/13/2027
RS-711 Syntron with RS-932 Boost Module (Phase B)	703179	Radian Research	703179-20260314	3/14/2027
RS-711 Syntron with RS-932 Boost Module (Phase C)	703142	Radian Research	703142-20260315	3/15/2027

Laboratory Technician Signature

Template 9903337.02
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Calibration Certificate Number:

Z-XXXXXX-20261016

Calibration Report

RX-10 Xytronic Portable Standard

Function.....… Watt-hour 60 Hz

Date.....…..... 16-Oct-26

Serial Number……..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the instrument under test.

Voltage & Phase Angle

Amps	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
0.2	0.002	-0.002	0.006	0.002	0.000	0.005	0.001	0.001	0.000	0.002	0.002	0.001
0.25	0.002	-0.001	0.006	0.003	-0.001	0.004	0.000	0.001	0.000	0.001	0.002	0.001
0.5	0.002	-0.002	0.005	0.002	-0.001	0.004	0.000	-0.001	0.000	0.001	0.000	0.000
1	0.002	-0.004	0.007	0.002	-0.003	0.005	0.000	-0.002	0.001	0.001	-0.001	0.002
2.5	0.001	-0.004	0.006	0.002	-0.002	0.004	-0.001	-0.001	0.000	0.000	-0.001	0.001
3	0.002	-0.003	0.007	0.002	-0.003	0.005	0.000	-0.002	0.001	0.001	-0.001	0.002
5	0.003	-0.003	0.007	0.002	-0.002	0.006	0.001	-0.001	0.002	0.002	0.000	0.003
10	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.004	-0.004	0.002	0.004	-0.003
15	0.002	0.002	0.002	0.002	0.003	0.001	0.001	0.004	-0.004	0.002	0.005	-0.003
20	0.002	0.002	0.002	0.002	0.003	0.000	0.001	0.004	-0.004	0.002	0.004	-0.003
30	0.002	0.003	0.002	0.002	0.003	0.000	0.001	0.005	-0.004	0.002	0.006	-0.003
40	0.003	0.003	0.001	0.002	0.004	-0.001	0.001	0.005	-0.005	0.002	0.006	-0.004
50	0.002	0.004	0.001	0.003	0.004	0.000	0.001	0.005	-0.005	0.002	0.006	-0.004
60	0.003	0.003	0.001	0.003	0.004	0.001	0.001	0.005	-0.004	0.002	0.005	-0.003
100	0.004	0.005	0.001	0.004	0.006	0.000	0.003	0.007	-0.003	0.004	0.008	-0.002
120	0.003	0.003	0.001	0.004	0.005	0.001	0.003	0.007	-0.003	0.004	0.008	-0.002
180	0.002	0.003	-0.003	0.003	0.005	-0.003	0.002	0.007	-0.007	0.003	0.008	-0.005
200	0.002	0.004	-0.002	0.003	0.005	-0.003	0.001	0.008	-0.006	0.002	0.008	-0.005
Average	0.002	0.001	0.003	0.002	0.002	0.002	0.001	0.003	-0.002	0.002	0.004	-0.002
Minimum	0.001	-0.004	-0.003	0.002	-0.003	-0.003	-0.001	-0.002	-0.007	0.000	-0.001	-0.005
Maximum	0.004	0.005	0.007	0.004	0.006	0.006	0.003	0.008	0.002	0.004	0.008	0.003

Overall	**Unity PF**	**0.5 Lag**	**0.5 Lead**
Average	0.002	0.002	0.000
Minimum	-0.001	-0.004	-0.007
Maximum	0.004	0.008	0.007

Calibration Report

RX-10 Xytronic Portable Standard

Function..... Watts 60 Hz

Date.....…..... 16-Oct-26

Serial Number…..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the instrument under test.

Voltage & Phase Angle

Amps	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
0.2	0.002	-0.002	0.006	0.003	0.000	0.005	0.001	0.001	0.000	0.002	0.002	0.001
0.25	0.002	-0.001	0.006	0.003	-0.001	0.005	0.000	0.001	0.000	0.001	0.002	0.001
0.5	0.002	-0.002	0.005	0.002	-0.001	0.004	0.000	-0.001	0.000	0.001	0.000	0.000
1	0.002	-0.004	0.007	0.002	-0.003	0.006	0.001	-0.002	0.001	0.002	-0.001	0.002
2.5	0.002	-0.004	0.006	0.002	-0.002	0.004	-0.001	-0.001	0.000	0.000	-0.001	0.001
3	0.002	-0.003	0.007	0.002	-0.002	0.005	0.001	-0.002	0.001	0.001	-0.001	0.002
5	0.003	-0.003	0.007	0.003	-0.002	0.006	0.001	-0.001	0.002	0.002	0.000	0.003
10	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.004	-0.004	0.002	0.005	-0.003
15	0.002	0.002	0.002	0.002	0.003	0.001	0.001	0.004	-0.004	0.002	0.005	-0.003
20	0.002	0.002	0.002	0.002	0.003	0.000	0.001	0.004	-0.004	0.002	0.004	-0.003
30	0.002	0.003	0.002	0.002	0.003	0.000	0.001	0.005	-0.004	0.002	0.006	-0.003
40	0.003	0.004	0.001	0.003	0.004	0.000	0.001	0.006	-0.005	0.002	0.006	-0.004
50	0.002	0.004	0.001	0.003	0.004	0.000	0.001	0.006	-0.005	0.002	0.007	-0.004
60	0.003	0.003	0.001	0.003	0.004	0.001	0.001	0.005	-0.004	0.002	0.006	-0.003
100	0.004	0.005	0.002	0.004	0.006	0.000	0.003	0.007	-0.003	0.004	0.008	-0.002
120	0.003	0.003	0.001	0.004	0.005	0.001	0.003	0.007	-0.003	0.004	0.008	-0.002
180	0.002	0.003	-0.003	0.003	0.005	-0.003	0.002	0.007	-0.007	0.003	0.008	-0.005
200	0.002	0.004	-0.002	0.003	0.005	-0.003	0.001	0.008	-0.006	0.003	0.008	-0.005
Average	0.002	0.001	0.003	0.003	0.002	0.002	0.001	0.003	-0.002	0.002	0.004	-0.002
Minimum	0.002	-0.004	-0.003	0.002	-0.003	-0.003	-0.001	-0.002	-0.007	0.000	-0.001	-0.005
Maximum	0.004	0.005	0.007	0.004	0.006	0.006	0.003	0.008	0.002	0.004	0.008	0.003

Overall	**Unity PF**	**0.5 Lag**	**0.5 Lead**
Average	0.002	0.002	0.000
Minimum	-0.001	-0.004	-0.007
Maximum	0.004	0.008	0.007

Calibration Report

RX-10 Xytronic Portable Standard

Function.....…… VAR-hour 60 Hz

Date.....…..... 16-Oct-26

Serial Number…..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VARh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the instrument under test.

Voltage & Phase Angle

Amps	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
0.2	0.001	0.006	0.002	0.005	0.001	0.003	0.003	0.005
0.25	0.000	0.006	0.000	0.004	0.000	0.001	0.002	0.003
0.5	0.000	0.005	0.001	0.004	-0.001	-0.001	0.001	0.002
1	-0.001	0.006	0.000	0.003	-0.003	-0.001	-0.002	0.000
2.5	0.000	0.005	-0.001	0.002	-0.002	-0.002	-0.001	-0.001
3	-0.001	0.005	-0.001	0.002	-0.003	-0.002	-0.002	-0.001
5	0.000	0.005	0.001	0.004	-0.002	-0.001	-0.001	0.001
10	0.000	0.000	0.000	-0.001	-0.002	-0.007	-0.001	-0.005
15	0.001	0.000	0.000	-0.001	-0.002	-0.006	-0.001	-0.004
20	0.001	0.000	0.000	-0.002	-0.002	-0.007	-0.001	-0.005
30	0.001	0.000	0.000	-0.001	-0.002	-0.007	-0.001	-0.005
40	0.001	0.000	0.001	-0.001	-0.001	-0.007	0.000	-0.005
50	0.002	0.000	0.001	-0.001	-0.001	-0.006	0.000	-0.005
60	0.001	0.001	0.001	-0.002	-0.002	-0.007	0.000	-0.005
100	0.003	0.003	0.002	-0.001	0.000	-0.006	0.001	-0.005
120	0.003	0.004	0.001	0.000	-0.001	-0.006	0.001	-0.005
180	0.003	0.002	0.000	-0.003	-0.002	-0.008	-0.001	-0.007
200	0.003	0.003	0.001	-0.003	-0.001	-0.008	0.000	-0.007

Average	0.001	0.003	0.000	0.000	-0.001	-0.004	0.000	-0.003
Minimum	-0.001	0.000	-0.001	-0.003	-0.003	-0.008	-0.002	-0.007
Maximum	0.003	0.006	0.002	0.005	0.001	0.003	0.003	0.005

Overall	**90°Lag**	**30°Lag**
Average	0.000	-0.001
Minimum	-0.003	-0.008
Maximum	0.003	0.006

Calibration Report

RX-10 Xytronic Portable Standard

Function.....…… VAR 60 Hz

Date.....…..... 16-Oct-26

Serial Number…..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAR calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the instrument under test.

Voltage & Phase Angle

Amps	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
0.2	0.001	0.006	0.002	0.005	0.001	0.003	0.003	0.005
0.25	0.001	0.006	0.000	0.004	0.001	0.001	0.002	0.003
0.5	0.000	0.006	0.001	0.004	-0.001	-0.001	0.001	0.002
1	-0.001	0.006	0.000	0.003	-0.003	-0.001	-0.001	0.000
2.5	0.000	0.005	0.000	0.002	-0.002	-0.002	-0.001	-0.001
3	-0.001	0.005	0.000	0.003	-0.003	-0.002	-0.002	-0.001
5	0.000	0.006	0.001	0.004	-0.002	-0.001	-0.001	0.001
10	0.000	0.000	0.000	-0.001	-0.002	-0.007	-0.001	-0.004
15	0.001	0.000	0.000	-0.001	-0.002	-0.006	-0.001	-0.004
20	0.001	0.000	0.000	-0.002	-0.002	-0.007	-0.001	-0.005
30	0.001	0.000	0.000	-0.001	-0.001	-0.007	0.000	-0.005
40	0.001	0.000	0.001	-0.001	-0.001	-0.007	0.000	-0.005
50	0.002	0.001	0.002	-0.001	-0.001	-0.006	0.000	-0.005
60	0.001	0.001	0.001	-0.002	-0.002	-0.007	0.000	-0.005
100	0.003	0.003	0.002	-0.001	0.000	-0.006	0.001	-0.005
120	0.003	0.004	0.001	0.000	-0.001	-0.006	0.001	-0.005
180	0.003	0.002	0.000	-0.003	-0.002	-0.008	-0.001	-0.007
200	0.003	0.003	0.001	-0.003	-0.001	-0.008	0.000	-0.007

Average	0.001	0.003	0.001	0.000	-0.001	-0.004	0.000	-0.003
Minimum	-0.001	0.000	0.000	-0.003	-0.003	-0.008	-0.002	-0.007
Maximum	0.003	0.006	0.002	0.005	0.001	0.003	0.003	0.005

Overall	**90°Lag**	**30°Lag**
Average	0.000	-0.001
Minimum	-0.003	-0.008
Maximum	0.003	0.006

Calibration Certificate Number:

Calibration Report

RX-10 Xytronic Portable Standard

Function……VA-hour RMS 60 Hz

Date.....…..... 16-Oct-26

Serial Number…..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the instrument under test.

Voltage & Phase Angle

Amps	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
0.2	0.003	0.002	0.002	0.002	0.002	0.001	0.001	0.002	0.000	0.002	0.003	-0.001
0.25	0.003	0.002	0.002	0.003	0.002	0.002	0.000	0.001	0.000	0.001	0.002	-0.001
0.5	0.002	0.002	0.002	0.002	0.001	0.002	0.001	0.000	0.000	0.002	0.001	0.000
1	0.002	0.001	0.003	0.002	0.000	0.002	0.001	-0.001	0.001	0.002	0.000	0.001
2.5	0.002	0.001	0.002	0.002	0.000	0.002	0.001	-0.001	0.000	0.001	-0.001	0.000
3	0.002	0.001	0.003	0.002	0.000	0.002	0.001	-0.001	0.000	0.001	-0.001	0.001
5	0.003	0.001	0.003	0.003	0.001	0.002	0.001	0.000	0.001	0.002	0.001	0.002
10	0.003	0.001	0.002	0.002	0.001	0.002	0.001	-0.002	0.002	0.002	-0.001	0.001
15	0.002	0.001	0.003	0.003	0.001	0.002	0.001	-0.001	0.001	0.002	0.000	0.002
20	0.002	0.001	0.002	0.002	0.001	0.003	0.001	-0.001	0.002	0.002	-0.001	0.002
30	0.002	0.002	0.002	0.003	0.002	0.002	0.001	-0.001	0.001	0.002	0.000	0.002
40	0.003	0.002	0.002	0.003	0.002	0.003	0.001	-0.001	0.002	0.002	0.000	0.002
50	0.003	0.002	0.002	0.003	0.002	0.002	0.001	0.000	0.001	0.002	0.000	0.002
60	0.003	0.002	0.003	0.003	0.001	0.003	0.001	-0.001	0.002	0.002	0.000	0.003
100	0.004	0.003	0.004	0.004	0.003	0.006	0.003	0.001	0.005	0.004	0.002	0.005
120	0.004	0.003	0.004	0.004	0.002	0.005	0.003	0.000	0.004	0.004	0.001	0.004
180	0.002	0.003	0.002	0.003	0.001	0.004	0.002	-0.001	0.003	0.003	0.000	0.003
200	0.002	0.004	0.001	0.003	0.001	0.004	0.001	-0.001	0.003	0.002	0.000	0.003
Average	0.003	0.002	0.003	0.003	0.001	0.003	0.001	0.000	0.002	0.002	0.000	0.002
Minimum	0.002	0.001	0.001	0.002	0.000	0.001	0.000	-0.002	0.000	0.001	-0.001	-0.001
Maximum	0.004	0.004	0.004	0.004	0.003	0.006	0.003	0.002	0.005	0.004	0.003	0.005

Overall	**Unity PF**	**0.5 Lag**	**0.5 Lead**
Average	0.002	0.001	0.002
Minimum	0.000	-0.002	-0.001
Maximum	0.004	0.004	0.006

Calibration Report

RX-10 Xytronic Portable Standard

Function…..…….. VA RMS 60 Hz

Date.....…..... 16-Oct-26

Serial Number……..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VA calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the instrument under test.

Voltage & Phase Angle

Amps	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
0.2	0.003	0.003	0.002	0.003	0.003	0.001	0.001	0.002	0.000	0.002	0.003	-0.001
0.25	0.003	0.002	0.002	0.003	0.002	0.002	0.001	0.001	0.000	0.002	0.002	-0.001
0.5	0.002	0.002	0.003	0.002	0.001	0.002	0.001	0.000	0.000	0.002	0.001	0.000
1	0.002	0.001	0.003	0.002	0.000	0.002	0.001	-0.001	0.001	0.002	0.000	0.001
2.5	0.002	0.001	0.002	0.002	0.000	0.002	0.001	-0.001	0.000	0.001	-0.001	0.000
3	0.002	0.001	0.003	0.002	0.000	0.002	0.001	-0.001	0.000	0.001	0.000	0.001
5	0.003	0.001	0.003	0.003	0.001	0.002	0.001	0.000	0.001	0.002	0.001	0.002
10	0.003	0.001	0.003	0.002	0.001	0.002	0.001	-0.001	0.002	0.002	-0.001	0.002
15	0.002	0.001	0.003	0.003	0.002	0.002	0.001	-0.001	0.001	0.002	0.000	0.002
20	0.002	0.001	0.002	0.002	0.001	0.003	0.001	-0.001	0.002	0.002	0.000	0.002
30	0.002	0.002	0.002	0.003	0.002	0.002	0.001	-0.001	0.001	0.002	0.000	0.002
40	0.003	0.002	0.002	0.003	0.002	0.003	0.001	-0.001	0.002	0.002	0.000	0.002
50	0.003	0.002	0.002	0.003	0.002	0.002	0.001	0.000	0.001	0.002	0.000	0.002
60	0.003	0.002	0.003	0.003	0.001	0.003	0.001	-0.001	0.002	0.002	0.000	0.003
100	0.004	0.004	0.004	0.004	0.003	0.006	0.003	0.001	0.005	0.004	0.002	0.005
120	0.004	0.004	0.004	0.004	0.002	0.005	0.003	0.000	0.004	0.004	0.001	0.004
180	0.002	0.003	0.002	0.003	0.001	0.004	0.002	-0.001	0.003	0.003	0.000	0.003
200	0.002	0.004	0.001	0.003	0.001	0.004	0.002	-0.001	0.003	0.003	0.000	0.003
Average	0.003	0.002	0.003	0.003	0.001	0.003	0.001	0.000	0.002	0.002	0.000	0.002
Minimum	0.002	0.001	0.001	0.002	0.000	0.001	0.001	-0.001	0.000	0.001	-0.001	-0.001
Maximum	0.004	0.004	0.004	0.004	0.003	0.006	0.003	0.002	0.005	0.004	0.003	0.005

Overall	**Unity PF**	**0.5 Lag**	**0.5 Lead**
Average	0.002	0.001	0.002
Minimum	0.001	-0.001	-0.001
Maximum	0.004	0.004	0.006

Calibration Report

RX-10 Xytronic Portable Standard

Function…..…….. Qh RMS 60 Hz

Date.....…..... 16-Oct-26

Serial Number……..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Q-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the instrument under test.

Voltage & Phase Angle

Amps	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
0.2	0.005	0.001	-0.004	0.006	0.002	-0.004	0.003	0.002	-0.004	0.005	0.003	-0.004
0.25	0.005	0.002	-0.003	0.005	0.003	-0.003	0.003	0.002	-0.003	0.004	0.003	-0.003
0.5	0.004	0.000	-0.004	0.004	0.001	-0.003	0.000	0.000	-0.002	0.002	0.001	-0.002
1	0.005	0.001	-0.004	0.005	0.001	-0.003	0.000	0.000	-0.002	0.001	0.001	-0.001
2.5	0.004	0.001	-0.004	0.004	0.001	-0.003	-0.001	-0.001	-0.001	0.001	0.000	0.000
3	0.004	0.001	-0.004	0.004	0.001	-0.002	-0.001	-0.001	-0.001	0.001	0.000	0.000
5	0.005	0.001	-0.004	0.005	0.001	-0.002	0.000	0.000	-0.001	0.001	0.001	0.000
10	0.000	0.001	0.001	0.000	0.001	0.002	-0.005	-0.001	0.004	-0.004	0.000	0.005
15	0.001	0.001	0.001	0.000	0.001	0.003	-0.005	0.000	0.004	-0.004	0.001	0.005
20	0.000	0.001	0.001	-0.001	0.001	0.003	-0.006	-0.001	0.004	-0.005	0.000	0.005
30	0.000	0.001	0.001	-0.001	0.001	0.003	-0.005	0.000	0.005	-0.004	0.001	0.005
40	0.000	0.001	0.002	-0.001	0.002	0.004	-0.006	0.000	0.005	-0.005	0.001	0.006
50	0.000	0.002	0.001	-0.001	0.002	0.003	-0.006	0.000	0.005	-0.005	0.001	0.006
60	0.001	0.002	0.001	-0.001	0.002	0.003	-0.006	0.000	0.005	-0.005	0.001	0.006
100	0.002	0.003	0.002	0.000	0.003	0.005	-0.006	0.001	0.007	-0.005	0.002	0.008
120	0.002	0.003	0.001	0.000	0.003	0.004	-0.006	0.001	0.007	-0.005	0.002	0.008
180	0.001	0.003	0.000	-0.002	0.002	0.004	-0.008	0.000	0.007	-0.007	0.001	0.008
200	0.002	0.003	0.000	-0.002	0.002	0.004	-0.008	0.000	0.007	-0.007	0.001	0.008
Average	0.002	0.002	-0.001	0.001	0.002	0.001	-0.004	0.000	0.003	-0.002	0.001	0.003
Minimum	0.000	0.000	-0.004	-0.002	0.001	-0.004	-0.008	-0.001	-0.004	-0.007	0.000	-0.004
Maximum	0.005	0.003	0.002	0.006	0.003	0.005	0.003	0.002	0.007	0.005	0.003	0.008

Overall	**Unity PF**	**0.5 Lag**	**0.5 Lead**
Average	-0.001	0.001	0.002
Minimum	-0.008	-0.001	-0.004
Maximum	0.006	0.003	0.008

Calibration Report

RX-10 Xytronic Portable Standard

Function.....… Watt-hour 60 Hz Pulse Output

Date.....…..... 16-Oct-26

Serial Number…..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 watt-hour calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the instrument under test.

Voltage & Phase Angle

Amps	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
0.2	0.002	-0.001	0.006	0.003	0.000	0.005	0.001	0.001	0.001	0.002	0.002	0.001
0.25	0.003	-0.001	0.006	0.003	-0.001	0.005	0.001	0.001	0.000	0.002	0.002	0.001
0.5	0.002	-0.002	0.005	0.002	-0.001	0.004	0.001	-0.001	0.000	0.002	0.000	0.000
1	0.002	-0.004	0.007	0.002	-0.002	0.005	0.001	-0.002	0.001	0.002	-0.001	0.002
2.5	0.002	-0.004	0.006	0.002	-0.002	0.004	0.000	-0.001	0.000	0.001	-0.001	0.001
3	0.002	-0.003	0.007	0.002	-0.002	0.005	0.001	-0.002	0.001	0.001	-0.001	0.002
5	0.003	-0.003	0.008	0.003	-0.002	0.006	0.001	-0.001	0.002	0.002	0.000	0.003
10	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.004	-0.004	0.002	0.005	-0.003
15	0.002	0.002	0.002	0.003	0.003	0.001	0.001	0.004	-0.004	0.002	0.005	-0.003
20	0.002	0.002	0.002	0.002	0.003	0.000	0.001	0.004	-0.004	0.002	0.004	-0.003
30	0.002	0.003	0.002	0.003	0.003	0.000	0.001	0.005	-0.004	0.002	0.006	-0.003
40	0.003	0.004	0.001	0.003	0.004	0.000	0.001	0.006	-0.005	0.002	0.007	-0.004
50	0.002	0.004	0.001	0.003	0.004	0.000	0.001	0.006	-0.005	0.002	0.007	-0.004
60	0.003	0.003	0.001	0.003	0.004	0.001	0.001	0.005	-0.003	0.002	0.006	-0.002
100	0.004	0.005	0.002	0.004	0.006	0.001	0.003	0.007	-0.003	0.004	0.008	-0.002
120	0.003	0.004	0.001	0.004	0.005	0.001	0.003	0.007	-0.003	0.004	0.008	-0.002
180	0.002	0.003	-0.003	0.003	0.005	-0.003	0.002	0.007	-0.007	0.003	0.008	-0.005
200	0.002	0.004	-0.002	0.003	0.005	-0.003	0.001	0.008	-0.006	0.002	0.008	-0.005
Average	0.003	0.001	0.003	0.003	0.002	0.002	0.001	0.003	-0.002	0.002	0.004	-0.001
Minimum	0.002	-0.004	-0.003	0.002	-0.002	-0.003	0.000	-0.002	-0.007	0.001	-0.001	-0.005
Maximum	0.004	0.005	0.008	0.004	0.006	0.006	0.003	0.008	0.002	0.004	0.008	0.003

Overall	**Unity PF**	**0.5 Lag**	**0.5 Lead**
Average	0.002	0.003	0.000
Minimum	0.000	-0.004	-0.007
Maximum	0.004	0.008	0.008

Calibration Report

RX-10 Xytronic Portable Standard

Function..... VAR 60 Hz Pulse Output

Date.....…..... 16-Oct-26

Serial Number…..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VARh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the instrument under test.

Voltage & Phase Angle

Amps	120 90°Lag	120 30°Lag	240 90°Lag	240 30°Lag	480 90°Lag	480 30°Lag	600 90°Lag	600 30°Lag
0.2	0.001	0.006	0.002	0.006	0.001	0.003	0.003	0.005
0.25	0.001	0.006	0.000	0.004	0.001	0.001	0.002	0.003
0.5	0.000	0.006	0.001	0.004	-0.001	-0.001	0.001	0.002
1	-0.001	0.006	0.000	0.003	-0.002	-0.001	-0.001	0.000
2.5	0.000	0.006	0.000	0.002	-0.002	-0.002	-0.001	-0.001
3	-0.001	0.005	0.000	0.003	-0.003	-0.002	-0.002	-0.001
5	0.001	0.006	0.001	0.004	-0.001	-0.001	0.000	0.001
10	0.000	0.001	0.000	-0.001	-0.002	-0.006	-0.001	-0.004
15	0.001	0.001	0.000	-0.001	-0.001	-0.006	0.000	-0.004
20	0.001	0.000	0.000	-0.002	-0.002	-0.007	-0.001	-0.005
30	0.001	0.000	0.000	-0.001	-0.001	-0.007	0.000	-0.005
40	0.002	0.000	0.002	-0.001	-0.001	-0.007	0.000	-0.005
50	0.002	0.001	0.002	-0.001	-0.001	-0.006	0.000	-0.005
60	0.001	0.001	0.001	-0.001	-0.002	-0.007	0.000	-0.005
100	0.004	0.003	0.002	-0.001	0.000	-0.006	0.001	-0.005
120	0.003	0.004	0.001	0.000	-0.001	-0.006	0.001	-0.005
180	0.003	0.002	0.000	-0.003	-0.002	-0.008	-0.001	-0.007
200	0.003	0.003	0.001	-0.003	-0.001	-0.008	0.000	-0.007

Average	0.001	0.003	0.001	0.001	-0.001	-0.004	0.000	-0.003
Minimum	-0.001	0.000	0.000	-0.003	-0.003	-0.008	-0.002	-0.007
Maximum	0.004	0.006	0.002	0.006	0.001	0.003	0.003	0.005

Overall	**90°Lag**	**30°Lag**
Average	0.000	-0.001
Minimum	-0.003	-0.008
Maximum	0.004	0.006

Calibration Certificate Number:

Calibration Report

RX-10 Xytronic Portable Standard

Function.....… VA-hour 60 Hz Pulse Output

Date.....…..... 16-Oct-26

Serial Number…..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 VAh calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 5 seconds and stabilization time in between points is 5 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the instrument under test.

Voltage & Phase Angle

Amps	120 Unity PF	120 0.5 Lag	120 0.5 Lead	240 Unity PF	240 0.5 Lag	240 0.5 Lead	480 Unity PF	480 0.5 Lag	480 0.5 Lead	600 Unity PF	600 0.5 Lag	600 0.5 Lead
0.2	0.004	0.003	0.003	0.003	0.003	0.002	0.001	0.002	0.000	0.002	0.003	0.000
0.25	0.003	0.002	0.002	0.003	0.002	0.002	0.001	0.001	0.000	0.002	0.002	0.000
0.5	0.002	0.002	0.003	0.002	0.002	0.002	0.001	0.000	0.000	0.002	0.002	0.001
1	0.002	0.001	0.003	0.002	0.000	0.002	0.001	-0.001	0.001	0.002	0.000	0.001
2.5	0.002	0.001	0.002	0.002	0.000	0.002	0.001	-0.001	0.000	0.001	0.000	0.000
3	0.002	0.001	0.003	0.002	0.000	0.002	0.001	-0.001	0.001	0.001	0.000	0.002
5	0.004	0.001	0.003	0.003	0.002	0.003	0.001	0.000	0.001	0.002	0.001	0.002
10	0.003	0.001	0.003	0.002	0.001	0.002	0.001	-0.001	0.002	0.002	0.000	0.002
15	0.002	0.001	0.003	0.003	0.002	0.002	0.001	-0.001	0.001	0.002	0.000	0.002
20	0.002	0.001	0.003	0.003	0.001	0.003	0.001	-0.001	0.002	0.002	0.000	0.002
30	0.002	0.002	0.003	0.003	0.002	0.002	0.001	-0.001	0.001	0.002	0.000	0.002
40	0.003	0.002	0.003	0.003	0.002	0.004	0.001	-0.001	0.002	0.002	0.000	0.002
50	0.003	0.002	0.003	0.003	0.002	0.003	0.001	0.000	0.001	0.002	0.000	0.002
60	0.003	0.002	0.003	0.003	0.001	0.003	0.002	0.000	0.002	0.003	0.000	0.003
100	0.004	0.004	0.005	0.005	0.003	0.006	0.003	0.001	0.005	0.004	0.002	0.005
120	0.004	0.004	0.004	0.004	0.002	0.005	0.003	0.000	0.004	0.004	0.001	0.004
180	0.003	0.003	0.002	0.003	0.001	0.004	0.002	-0.001	0.003	0.003	0.000	0.003
200	0.002	0.004	0.001	0.003	0.001	0.004	0.001	-0.001	0.003	0.003	0.000	0.003
Average	0.003	0.002	0.003	0.003	0.001	0.003	0.001	0.000	0.002	0.002	0.001	0.002
Minimum	0.002	0.001	0.001	0.002	0.000	0.002	0.001	-0.001	0.000	0.001	0.000	0.000
Maximum	0.004	0.004	0.005	0.005	0.003	0.006	0.003	0.002	0.005	0.004	0.003	0.005

Overall	**Unity PF**	**0.5 Lag**	**0.5 Lead**
Average	0.002	0.001	0.002
Minimum	0.001	-0.001	0.000
Maximum	0.005	0.004	0.006

Calibration Report

RX-10 Xytronic Portable Standard

Function.....…… Volts RMS 60 Hz

Date.....…..... 16-Oct-26

Serial Number…..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Volt calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the Instrument under test.

Voltage

	V RMS	Vh RMS	V2h RMS
60	0.002	0.002	0.004
80	0.002	0.002	0.003
100	0.001	0.001	0.002
120	0.001	0.001	0.002
140	0.001	0.001	0.001
160	0.002	0.002	0.004
180	0.002	0.002	0.004
200	0.002	0.002	0.003
220	0.002	0.001	0.003
240	0.001	0.001	0.003
260	0.001	0.001	0.002
280	0.001	0.001	0.003
300	0.001	0.001	0.003
320	0.000	0.000	0.000
340	0.000	0.000	0.000
360	0.000	0.000	0.000
380	0.000	0.000	0.000
400	0.000	0.000	0.000
420	0.000	0.000	0.000
440	0.000	0.000	0.000
460	0.000	0.000	0.000
480	0.000	0.000	0.000
500	0.000	0.000	0.000
520	0.000	0.000	0.000
540	0.000	0.000	0.000
560	0.000	0.000	0.001
580	0.001	0.000	0.001
600	0.001	0.001	0.002
Average	0.001	0.001	0.001
Minimum	0.000	0.000	0.000
Maximum	0.002	0.002	0.004

Calibration Certificate Number:

Z-XXXXXX-20261016

Calibration Report

RX-10 Xytronic Portable Standard

Function…….....…… Amps RMS 60 Hz

Date.....…..... 16-Oct-26

Serial Number…..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 Amp calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the Instrument under test.

Amps	A RMS	Ah RMS	A2h RMS
0.2	0.000	0.000	-0.001
0.25	0.000	0.000	0.000
0.5	-0.001	-0.001	-0.002
1	-0.001	-0.001	-0.002
2.5	-0.001	-0.001	-0.002
3	-0.001	-0.001	-0.002
5	0.000	0.000	-0.001
10	-0.001	-0.001	-0.001
15	0.000	0.000	-0.001
20	-0.001	-0.001	-0.001
30	0.000	0.000	-0.001
40	0.000	0.000	0.000
50	0.000	0.000	0.000
60	0.000	0.000	0.000
100	0.001	0.001	0.001
120	0.000	0.000	0.001
180	0.000	-0.001	-0.001
200	-0.001	-0.001	-0.001

Average	0.000	0.000	-0.001
Minimum	-0.001	-0.001	-0.002
Maximum	0.001	0.001	0.001

Calibration Certificate Number:

Z-XXXXXX-20261016

Calibration Report

RX-10 Xytronic Portable Standard

Mode.....…… Frequency

Date.....…..... 16-Oct-26

Serial Number…..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 time base calibration is derived directly from a Keysight Technologies 53220A Universal Counter/Timer, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). Test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the Instrument under test.

Frequency

45	0.000
46	0.000
47	0.000
48	0.000
49	0.000
50	0.000
51	0.000
52	0.000
53	0.000
54	0.000
55	0.000
56	0.000
57	0.000
58	0.000
59	0.000
60	0.000
61	0.000
62	0.000
63	0.000
64	0.000
65	0.000

Average	0.000

Minimum	0.000
Maximum	0.000

Calibration Report

RX-10 Xytronic Portable Standard

Function.....…… Phase 60 Hz

Date.....…..... 16-Oct-26

Serial Number…..... XXXXXX

The following data was collected by a Radian Research RS-933 Automated Calibration System. The RS-933 phase calibration is derived directly from (3) Radian RD-22-RTS Dytronic Transfer Standards, traceable to the SI through the National Institute of Standards and Technology (NIST) and the National Research Council of Canada (NRC) and/or other National Metrology Institute (NMI). The test time is 2 seconds and the stabilization time in between points is 2 seconds. For lagging power factors the current lags the voltage. All results are listed as Percent Error. The RS-933 Automated Calibration System has at least an 8 times greater accuracy than the instrument under test.

Voltage & Current

Phase	120 1	120 5	120 15	120 30	120 50	240 1	240 5	240 15	240 30	240 50	480 1	480 5	480 15	480 30	480 50
-180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
-150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
-120	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
-90	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
-60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
-30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
90	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
120	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
Average	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001