



# 6625A SYSTEM SERIES

## TURN-KEY RESISTANCE AND CURRENT MEASUREMENT SYSTEMS

Most Compact Modular Resistance and Current Measurement Systems Available Today!



6625A-300A System

### FEATURES

- Complete Turn-Key System – Fully Integrated, Wired, Tested and Ready-to-Use
- Widest Available Resistance Range from  $1\ \mu\Omega$  ~1G $\Omega$  with Internal Voltages to 1 kVdc
- Precision Current Sources / Range Extension from 3 A to 10,000 A with Built-In Precision Current Source and Electronic Switching
- Wide Range of Ratios: 0.1:1 ~ 100:1, and Up to 2,000,000:1 and More with Range Extension
- Full 10.5 Digits (0.1 ppb) Display Resolution
- Resolution:  $\pm 0.1$  ppb of Full Scale
- Unique Measurement Results and Trending Display
- Includes Manual and Automated Operation
- Modular Design, Expandable Capabilities, Investment Protection
- Change Key parameters "On-the-Fly" While Measurements are Running in Manual and Automated Modes
- Internal Temperature Bridge Option Available
- BridgeWorks™ Data Acquisition Software
- Unique Calibration Support Strategy

**Guildline's Instruments 6625A** is the only true modular Resistance and Current Measurement System providing users with unique industry leading features and capabilities.

The 6625A System is composed of a 6622A Series Bridge with Bridgeworks Software, a 6634A with up to ten Temperature Stabilized Resistance Standards, user selectable 6664C Scanners, and the highly successful 6623A Series of Precision Current Sources / Range Extenders.

**THE 6625A PROVIDES THE MOST ADVANCED AND CUSTOMIZABLE RESISTANCE AND CURRENT MEASUREMENT SYSTEM AVAILABLE TODAY. WITH INTERNAL VOLTAGES TO 1 KVDC AND CURRENTS TO 10,000 ADC, THIS SYSTEM MAXIMIZES FLEXIBILITY AND EXPANSION PATHS FOR FUTURE REQUIREMENTS!**

The System comes standard with the latest Laptop Computer, IEEE Card, cabling, and system rack with power strips, ground bar and laptop shelf. The 6625A system is fully wired and tested. This System is highly configurable and upgradeable for future requirements. Individual data sheets can be located on the Guildline Instruments Website for each of these instruments and standards.

Guildline's 6625A System provides demanding users around the world the best in DC Resistance and Current Measurement performance and value. Incorporating some of the most unique standards available for DC measurements, this System is the only true "turn-key" Resistance and Current Measurement System available today.

Guildline's unique design, performance, and modularity have resulted in over 175 customers deploying the 6625A System worldwide. These include National Metrology Institutes, Research Institutes, Militaries, and Primary Calibration Laboratories. The System is delivered ready for use in a single 'rolling' or 'fly-away' rack. In fact, the System as shown above left includes 10 Temperature Stabilized Resistance Reference Standards, Scanner, Resistance Bridge, and a 300 A Current Source and **is only 35" in total height – less than a meter.**

# 6625A Series of Resistance and Current Measurement Systems

## A COMPLETE TURN-KEY SOLUTION

The quality of the 6625A System extends to the Equipment Rack, PC Controller and Wiring. The rack is a heavy duty 19 inch standard rack with a system power module and rear fans. When you buy a 6625A System, you get:



A 6625A rack that also includes a power module, rear door, dual fans, and a high quality grounding plane included!

An optional slide out laptop tray for easy storage. The laptop tray also includes wiring for USB / IEEE Control as well as a slide out mouse platform.

A System that has all the standards mounted; ALL connected with the highest quality wiring installed, tested and marked!

A complete 6625A-300 Resistance and Current Measurement System provides measurements from  $1 \mu\Omega$  to  $1 \text{ G}\Omega$ , voltages up to 1000 V, and currents to 300 A; all integrated into a single rack less than 35 inches in height (i.e. less than 1 meter). All you need to do is plug the rack in and start making measurements.

An optional laptop PC controller with Bridgeworks software installed, and a National Instruments GPIB controller with drivers installed, completes this turn-key system!

Complete modularity and upgradeability to meet future requirements with complete investment protection!

***Who else can offer so much in a compact and easy to use system. The best in performance coupled with complete automation and modularity - That's Guildline's philosophy!***

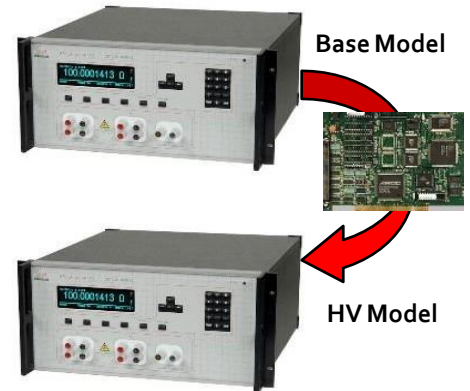
And our design functions, features and capabilities don't end here. At Guildline we are continually improving designs and capabilities. With over 27 Guildline patents granted or applied for in just the last 7 years – Guildline is the only

manufacturer today who has the capability to ensure that you are provided the best in measurements systems and results. 9 of those 27 patents are directly related to Guildline Bridges, 6625A Systems, and our newest innovations in Range Extenders and Precision Current Sources.

Don't be misled by other manufacturer's claims promising ease of use, modularity and upgradeability. The competitors 25-year-old technology is simply not the same as Guildline's modern patent-protected designs. The differences between old technology and Guildline's modern designs are material in terms of performance, ease of use, developing 17025 calibration procedures, training and life cycle costs.

# 6625A Series of Resistance and Current Measurement Systems

Consider Guildline's 6622A Series of Modular and Upgradeable DCC Bridges, specifically the 6622A-Base Model (shown right). This model goes from 1 m $\Omega$  to 100 k $\Omega$  and at measurement uncertainties starting at 0.1 ppm with currents at 150 mA. Now you want to increase your upper measurement range to 1 G $\Omega$  and voltages to 1000 V. You simply return the bridge to Guildline. We add **internal board upgrades** to the same unit that you returned, calibrate the Bridge, and return this same Bridge back to you. It will fit exactly where it fit before, you still have only one Bridge to support, all previous software will continue to run, and there is no new learning curve for the use of the Bridge or measurement process. Yet you now have 1000 V output and ranges to 1 G $\Omega$ ! We can upgrade Ranges, Voltages, Currents, and even uncertainties. This is how we define modularity and upgradeability.



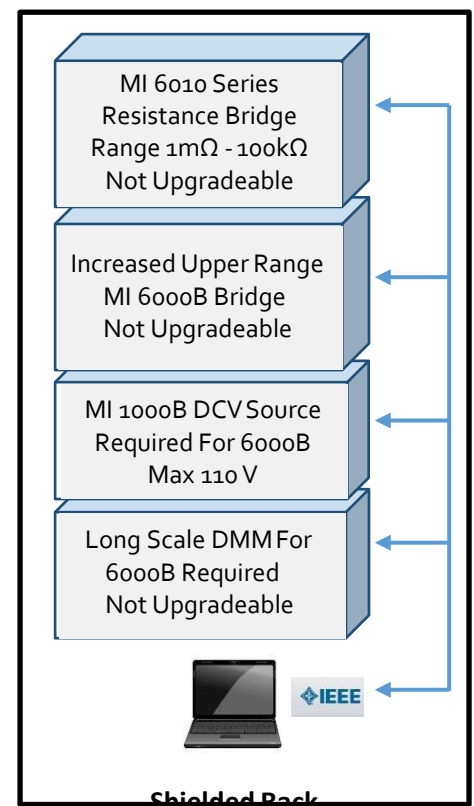
How about the competition's definition of modularity and upgradeability? Their 'primary bridges' ranges from 1 m $\Omega$  to 10 k $\Omega$ . However, what if you want to increase your upper measurement range to 1 G $\Omega$  and voltages to 1000 Volts. Do you send back your bridge to have it upgraded? No! You are required to buy a new MI bridge and additional standards including an external voltage source that is not made by MI. These additional standards do not operate the same way so brand new procedures need to be developed and different user interfaces learned.

To be specific MI's 6010 can only go up to 100k $\Omega$ . A customer needs to purchase an MI high resistance bridge (e.g. MI 6000B) measure higher than 100 k $\Omega$ s. However, the 6000B bridge is limited to only 110 Volts. That means no matter how hard a customer tries, they cannot get to 1000 Volts. Also note that the 6000B cannot work unless you also buy an external "precision" voltage source. MI recommends their own 1000B, which is provided by another company called Transmille. To make a measurement, in addition to the 6000B and external Voltage Source, a customer also requires a long scale DMM such as a 3458A or Fluke8508.

With no display on the 6000B – it is very difficult to run manually, which means you also need IEEE and a Controller with Software. One last item – you will need MI's 5 Foot Shielded rack as all this equipment is susceptible to EMI noise. Then when you are ready to make measurements you have to use two separate connection points and two separate measurement setups (i.e. 6010 and 6000B) for calibrating resistors; and you have to use custom developed programs and a controller just to make all this equipment work.

Even with all these additional required standards, the competition's equipment is still not equal to the measurement capabilities of the **6622A Series One Bridge Solution** provided by Guildline in the 6625A System. Is having to buy, support and learn new standards really a modular and upgradeable approach, or is the competition's "Advanced and Modular Solutions" just a play on words to appear to offer something other than 20 year old technology? The real truth is that the competition requires multiple bridges, and multiple standards from other vendors, just to cover the same resistance range as a single Guildline 6622A **ONE BRIDGE Solution**.

With the **complete 6625A System**, manual and automated operation for Precision Resistance and Current measurements have never been easier given the advanced functionality of a 6622A Series Direct Current Comparator Bridge. The 6625A Resistance and Current Measurement System is the only system in the world where all measurements can be controlled from the front panel of the resistance bridge or from a connected computer.



# 6625A Series of Resistance and Current Measurement Systems

The 6622A Series Bridge provides a full 10.5 digits of resolution and the ability to graphically see the data (trending). You can have the data presented in a summary or detailed format right on the Bridge Screen for manual operations or automatically provided via PC based Bridgeworks Software. Measurement and Uncertainty Analysis you need as a Metrologist that meets the requirements of ISO/IEC 17025 Accreditation for both Resistance and Current measurements! IEEE 488.2 is standard on all models with the universally recognized Standard Code Programmable Interface (SCPI) based commands incorporated as the programming language of choice.

## 6625A System Features:

The 6625A Resistance and Current Measurement System provides industry leading features, along with optional adaptors and utilities, to NMIs, Calibration Laboratories, militaries and other customers with both manual and automated routines for:

- Resistance Measurement from 1  $\mu\Omega$  to 100 M $\Omega$  and Voltages to 100 Vdc!
- Optional Bridge Capabilities that Extends Range to 1 G $\Omega$  with voltages to 1000 Vdc (Internally)!
- Standard Output Current to 300 Adc!
- Optional Current Sources / Extenders at Modular Currents up to 10,000 A!
- Optional Bridge Capabilities that Extends Uncertainties to as Low as 0.015 ppm!
- 16 Channel Scanner Rated to 1000 V!
- Optional Additional Scanner Channels up to 64 Channels!
- 10 Element Decade (i.e. 0.1  $\Omega$  to 100 M $\Omega$ ) Resistance Standards in a Temperature Stabilized Environment!
- Automated Verification Procedures to Ensure the 6625A System Remains Within Operating Specifications!
- Utility to Transfer Traceability of Primary Standards from NMI's or Other Sources!
- Resistance Calibration Utility for High End Calibrators like the Fluke 5700A or 5720A Series!
- Calibration Utility for Decade Boxes!
- DC Shunt Calibration Utility Including Support for Multi-Value Guildline 9210, 9211A and 9711A Shunts!
- Resistance Calibration of Long Scale Digital Multi-Meters (DMMs) such as the Agilent 3458A and Fluke 8508A with the Optional Unique 66252 DMM Switch!
- Optional Internal Temperature Measurement Capability – One Button Push Changes the System into a Fully Functional Temperature System with an Uncertainty of 0.025 mK with Optional 0.013 mK available!

## 6625A Modularity and Upgradeability Features:

The modularity of the 6625A System is based on over 60 years of innovation, design knowledge, and manufacturing experience that Guildline has in building resistance, current, and temperature measurement instruments. With a single system, the requirement for laboratory space is greatly reduced. There is also a corresponding reduction in the power requirements and associated heat generation when compared with numerous instruments required from multiple manufacturers to meet the same requirements.

**Increased Accuracy:** From the basic 0.1 ppm accuracy to 0.05 or 0.02 or 0.015 ppm accuracy. This allows customers to expand their calibration capabilities as new instruments are released into the market place without losing their current investment. No need to purchase a 2<sup>nd</sup> bridge to obtain lower uncertainties!

**Voltage Extension:** 30 Vdc is provided on the base bridge. Internally installed optional voltage modules that increase the voltage capabilities to 100 V or 1000 V are available to provide better measurements and uncertainties for higher value resistance standards, typically above 100 k $\Omega$ . With Guildline's Solution there is no need to purchase a second bridge and an external voltage source.

# 6625A Series of Resistance and Current Measurement Systems

**Expanded Resistance Measurement Range:** From 100 k $\Omega$  up to an expanded 1 G $\Omega$  range. There is no need to purchase a second - high resistance bridge and additional standards to cover the extended range of standard resistors. Need to go even higher? Add a Programmable 6530 TeraOhm Bridge-Meter to the system and have an automated system measuring all the way to 20 Peta Ohms!

**Current Extenders / Sources:** You can extend your current capabilities all the way to 10,000 A, with modular 150 A and/or modular 1000 A precision current sources. This represents substantial setup and ongoing operating cost savings in comparison to range extenders from other companies which need multiple external third-party power supplies and compressed gas driven mechanical switches to operate. A 6625A System with current extenders can also be used to calibrate DC shunts, such as Guildline's 9211A and 9230A series of Shunts, all the way to 10,000 A. Alternatively the 6623A Precision Current Sources can be purchased separately, along with the 66259 Current Controller, and used as a stand-alone precision current source.



**66252 DMM Switch:** A unique switch that allows the built in standard resistors provided with the 6625A

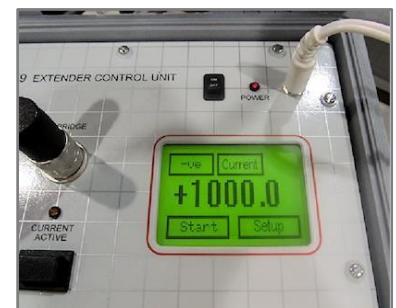
System to be used to calibrate highly accurate Digital Multi Meters (DMMs), Fluke Calibrators, and other metrology instruments. The DMM switch takes out the Bridge and other standards from the measurement circuitry and allows the Resistance Standard connected to the Scanner to be easily accessed and used.



**Temperature Option:** An expansion internal Bridge option that allows the 6625A System to also be used as a fully functional Temperature Measurement System. This is not just a conversion of the Resistance values, but a fully calibrated Temperature Bridge designed to operate at the lower 1 mA of current required by temperature measurements. Additionally, this option provides the fastest measurement speed available with non-filtered readings down to 2 seconds. Internal buffers allow the measurement data to be stored and analyzed visually as well as statistically. A customer simply has to select either Resistance or Temperature mode on the Bridge. The Temperature Option can measure and convert temperature directly, and display the values on the front panel. The front panel can also display a real time graph so a customer can visually track temperature changes and fixed point plateaus. This option is ideal for calibrating Platinum Resistance Thermometers (PRT's, SPRT's, HTPRT's), other RTD's, and Thermistors.



**66259 Current Controller:** An external option that allows the 6625A System Range Extender to also be used as a high precision DC Current Source without having to be connected to a bridge. A customer simply has to enter the desired current output into the independent controller. This option is very useful for providing precision current for calibration applications such as DC Current Shunts, Current Clamps, Safety Switches and other equipment requiring high current inputs and high compliance voltages. Not only is the current programmable, but parameters such as reversal rates, polarity, ramp time and others can also be accessed via the front panel or programmed via the USB connection that comes standard.



# 6625A Series of Resistance and Current Measurement Systems

## 6625A SYSTEM COMPONENTS:

The manual mode of operation for the 6625A System Bridge is impressive and this unique functionality improves the range of equipment that can be supported. The 6625A Resistance and Current Measurement System is even more amazing when operated in a computerized mode via the Standard IEEE488.2 communication. The included GUI based software program, Bridgeworks™, incorporates features and utilities that allow operators to improve measurement effectiveness and provide efficiency for data management. This includes the ability to perform automatic data acquisition, real time graphing of results, real time uncertainty analysis, history logging, charting, and regression analysis. All user definable test variables, such as resistance standard to use, excitation current, etc can be programmed on a per test basis. These features give users full control and flexibility in automating routine calibration procedures and maximizing workload capabilities.



The 6622A Series Bridge(s) provides unique manual and automated mode features that are not available from other manufacturers. For example, all key measurement variables can be changed while the measurement is running. The Bridge can be used in either a fixed or automatic reversal rate mode of operation. In fixed reversal rate mode, automatic current polarity reversal is programmable giving measurements from every 2 seconds to 14 minutes. In automated mode one feature allows the bridge to use dynamic reversal rates, optimizing the polarity reversal rate to the uncertainty required, thus providing the fastest measurement speed. For temperature applications, this feature makes it possible to track fast changing temperatures.

## SYSTEM RESISTANCE STANDARDS

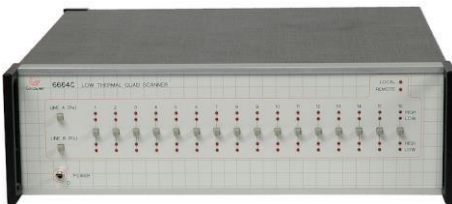
With the 6625A Resistance and Current Measurement System you have your choice in modular resistance standards. A 6634A Series Temperature Stabilized Resistance Standard can also be included or simply have the system pre-wired for your own Resistance Standards.

The 6634A Series provides a set of up to ten precision resistance standards enclosed in a temperature controlled chamber. Temperature monitoring is provided by a precision PRT sensor installed in the chamber with 4 terminal connectors provided on the front panel. There are up to 10 standard resistance values available covering the decade range of 0.1  $\Omega$  to 100 M $\Omega$ . Each resistance element is isolated and has a 4 terminal connection at the back panel. The resistance elements are maintained at  $30 \pm 0.01$  °C in a temperature stabilized chamber. Resistance elements are electrically isolated and bonded to an aluminum block to reduce thermal gradients in the inner chamber. The inner chamber is designed to electrically shield the individual elements and an electrical connection is provided to a guard terminal at the back panel. Full specifications can be found on the Guildline website for this Standard.



## SYSTEM SCANNER(S)

A Guildline Model 6664C Series Low Thermal Matrix Scanner is included with the System. The number of channels can go up to 64 channels with options. Every channel in the 6664C Series is rated for 2 A and 1000 V. Manual operation is easy and straight forward. Simply select the channels for the 6634A Resistance Standard and for the Unit Under Test and start the measurement. For automated applications with Bridgeworks Software, multiple tests can be sequenced and grouped for measurements to run even when operators are not present! The 6625A is a complete System capable of fully automated multiple-channel calibrations and measurements.



# 6625A Series of Resistance and Current Measurement Systems

## 6625A SYSTEM RANGE EXTENDER (6623A SERIES)

The PATENTED Guildline 6623A Series of Range Extenders/Precision Current Sources extends the 6625A current capabilities from 150 mA up to 10,000 A. For up to 300 A only a single 120 V, 15 A circuit is required. The heart of the 6623A design is our 150 A uni-polar precision current supply PCB pictured on the left.



external third-party power supplies, use of external mechanical switches and compressed gas, and even the software programming difficulties associated with implementing these external components. This means the 6623A provides the required current with automatic polarity reversal at user selected intervals, without using external switches or specialized external computer controls. For manual mode of operation, output of current is straight forward. If you require 300 A of current, you simply enter 300 A as the required current on the front panel of the connected 6622A Bridge. No need to manually set or adjust external power supplies, external switches, extenders, and associated

wiring. This completely self-contained range extender allows you to fully automate calibration procedures.

This design provides the most compact and stable Range Extender / Precision Current Source available today. The 300 A model to the right is only 4U (7 inches or 17.8 cm) in total height. That is the complete range extender with precision current source and electronic switching in a single frame! The 450 to 600 A models are only 5U (8.75" or 22.2 cm) in total height. If you need to go higher, the 1000 A model is 10U in height while moving up to 3000 A is less than 36 Inches (i.e. < 1 meter) in total height! No other manufacturer can offer so much in a compact size with a world leading design.

The 6623A Specifications are listed as a complete system specification (refer to 6623A Data Sheet). This specification includes all components (Bridge, Scanner, Current Source, Switching, Temperature, etc) and you only need to add the uncertainty of the Reference Resistor you are using.



## 6625 A RESISTANCE (SHUNT) MEASUREMENT SPECIFICATIONS

Complete System specifications are determined by the standards selected for incorporation into the System. Since the 6625A System is highly customizable and easily tailored for individual customer's measurement requirements, the actual system specification can be easily calculated. Using one of the most popular configurations sold today, an example 6625A specification is provided. This is a complete system specification listed and is a two sigma, absolute specification (including all secondary specifications) for the standards listed and in a laboratory environment of 23 °C +/- 2 °C. This 6625A configuration is for a 6622A-XR Bridge, a 6664C Scanner, and a 6623A-300 A Range Extender / Precision Current Source. Note that these specifications do not include the reference resistance standard, but resistance standard specifications are listed in the datasheet for the Guildline 6634A Series.

# 6625A Series of Resistance and Current Measurement Systems

Example 6625A System Range Measurement Specifications with a 6622A-XR Series Bridge and 6623A-300 Ampere Range Extender! With Guildlines unique modularity, you can increase measurement range, measurement voltage, measurement current, number of channels and lots more – all while protecting your initial investment, software development and operator training skills.

<h2 style="margin: 0;">6622A-XR</h2> <p style="margin: 0;">XP Range: 1 mΩ ◀ ▶ 100 MΩ</p>		Low Ohms Ratios <sup>1</sup>				
		R <sub>s</sub> 1 Ω ▶	± 0.8 ppm		± 0.7 ppm	
		NOMINAL RATIO ▶	0.001:1		0.01:1	
		ACTUAL RATIO ▶	0.8m > Rx < 0.008		0.008 > Rx < 0.08	
INTERCHANGE <sup>1</sup> SPECIFICATION	RESISTANCE STANDARD	3 YEAR RATIO SPECIFICATIONS <sup>2</sup>				
0.8 > Rx < 6.3	◀ ACTUAL RATIO ▶	0.08 > Rx < 0.8	0.8 > Rx < 6.3	6.3 > Rx < 13.4	13.4 > Rx < 107.5	
1 : 1	◀ NOMINAL RATIO ▶	0.1 : 1	1 : 1	10 : 1	100 : 1	
± 0.03 ppm	◀ 1 Ω ▶	± 0.6 ppm	± 0.1 ppm	± 0.1 ppm	± 0.1 ppm	
± 0.03 ppm	◀ 10 Ω ▶	± 0.6 ppm	± 0.1 ppm	± 0.1 ppm	± 0.1 ppm	
± 0.03 ppm	◀ 100 Ω ▶	± 0.6 ppm	± 0.1 ppm	± 0.1 ppm	± 0.2 ppm	
± 0.03 ppm	◀ 1 kΩ ▶	± 0.6 ppm	± 0.1 ppm	± 0.1 ppm	± 0.8 ppm	
± 0.05 ppm	◀ 10 kΩ ▶	± 0.6 ppm	± 0.1 ppm	± 0.2 ppm	± 3 ppm	
± 0.15 ppm	◀ 100 kΩ ▶	± 1 ppm	± 0.3 ppm	± 0.5 ppm	± 6 ppm	
± 0.25 ppm	◀ 1 MΩ ▶	± 2.5 ppm	± 0.6 ppm	± 0.8 ppm	± 8 ppm	
± 2.0 ppm	◀ 10 MΩ ▶	± 8 ppm	± 4 ppm	± 8 ppm	[HV MODEL]	

1 - Interchange specification (i.e. sometimes referred to as a self-calibration) and Low Ohms Ratio specifications - refer to 6622A Manual for additional information

2 - 3 Year Calibration interval with annual performance verification (automated)

6623A - 300 RANGE EXTENDER SPECIFICATIONS (OTHER CURRENT MODELS AVAILABLE)			
Resistance Range	1 μΩ to 100 Ω	Linearity	± 0.01 ppm of full scale ratio
Transformation Ratios and Accuracy	20:1 Ratio - ± 0.3 ppm	200:1 Ratio - ± 0.4 ppm,	2000:1 Ratio - ± 0.5 ppm

Low Ohms Mode - 6625A with 6622A-XR Bridge, 6623A-300 A Range Extender (no external mechanical switch required), Scanner, Wiring and 23°C +/- 2°C)

6623A (RX/RS) SYSTEM UNCERTAINTIES						
Resistance Measurement Range	1 μΩ ~ 10 μΩ	10 μΩ ~ 0.1mΩ	0.1mΩ ~ 0.5mΩ	0.5mΩ ~ 0.01Ω	1mΩ ~ 0.1Ω	10mΩ ~ 100Ω
6623A-300 Ratio Range	2000 : 1	2000 : 1	2000 : 1	2000 : 1	200 : 1	20 : 1
Maximum Test Current	300 A	300 A	300 A	300 A	15 A	3 A
Used with XRBridge	± 15 ppm	± 8 ppm	± 2 ppm	± 0.8 ppm	± 0.7 ppm	± 0.7 ppm



# 6625A Series of Resistance and Current Measurement Systems

Listed below are general specifications for the previously described 6625A System with coverage factor @ 95% (k=2). Note that height and weight are based on a 6625A 20U (36-inch or 91.5 cm) rack, fully wired including standard grounding plane, rear door and fans, a power bar, a 6634A Ten Element Resistance Standard, 6622A-XR Bridge, 6664C-16 Channel Scanner, 6623A-300 A Range Extender and the optional drawer with Laptop Controller integrated.

6625A SERIES GENERAL SPECIFICATIONS			
Linearity		± 0.01 ppm of Full Scale Ratio	
Display resolution (ppm)		Selectable (Programmable) from 0.0001 ppm to 10 ppm	
Temperature Coefficient		0.02 ppm/°C of reading	
Automatic current reversal rate (in seconds) s		4 s to 1637 s programmable, increment of 1 second	
Communication		IEEE 488.2 (SCPI Based Language Instructions)	
System Power Requirements		VAC: 100V, 120V, 220V and 240V ± 10% / 50 or 60Hz ± 5%	
System Operating Temperature to Full Specifications		23 °C ± 2 °C	73 °F ± 4 °F
System Maximum Operating Range (<50%RH)		+10 °C to +40 °C	+50 °F to +104 °F
System Temperature Storage Range		-20 °C to +60 °C	-4 °F to +140 °F
Operating Humidity	20% to 70% RH	Storage Humidity	15% to 80% RH
Typical 300 A System Dimensions (Width x Height x Depth) <sup>1</sup>			Weight
445 mm x 914 mm x 762 mm		17.5" x 36" x 30"	95 kg 210 lbs

<b>Normal Ohms Operation</b> Test current Specifications with 6622A-XR Series Bridge	Usable range (±30V compliance) (A)	10 µA ~ 150 mA	
	Resolution (µA)	1 µA	
	Accuracy [error(ppm) + offset(A)]	±100 ppm ± 10 µA	
<b>High Ohms Mode</b> Test Voltage Specifications with 6622A-XR / HV Series Bridge	V <sub>DC</sub> Range (±1mA compliance)	0 ~ 100 Vdc (XR) 0 ~ 1000 Vdc (HV)	
	Resolution (V)	1 V for XR, 4V for HV	
	Accuracy error (%)	± 0.2% of full scale voltage output	
<b>Low Ohms Mode Specifications Using 6623A-300 A Model</b>		Selected currents (manual or automated modes) are sourced from extender and programmed via the system Bridge). The model 66259 Programmable Controller is available to use the 6623A as a stand-alone precision current source.	
Temperature Coefficient	0.02 ppm/°C	Test Current Resolution	± 17 bits
Current Range (Ω)	150 mA to 300 A	Measurement Range	1 µΩ to 100 Ω
Test Current Output	Accuracy	Stability	Compliance Voltage
150 mA to 3 A	±0.1% ± 0.1 mA	±0.01% ± 0.1 mA	± 5 Volts
3 A to 15 A	±0.3% ± 5 mA	±0.03% ± 2 mA	± 7.5 Volts
15 A to 300 A	±0.4% ± 30 mA	±0.05% ± 6 mA	± 1.5 Volts (limited to 480W)

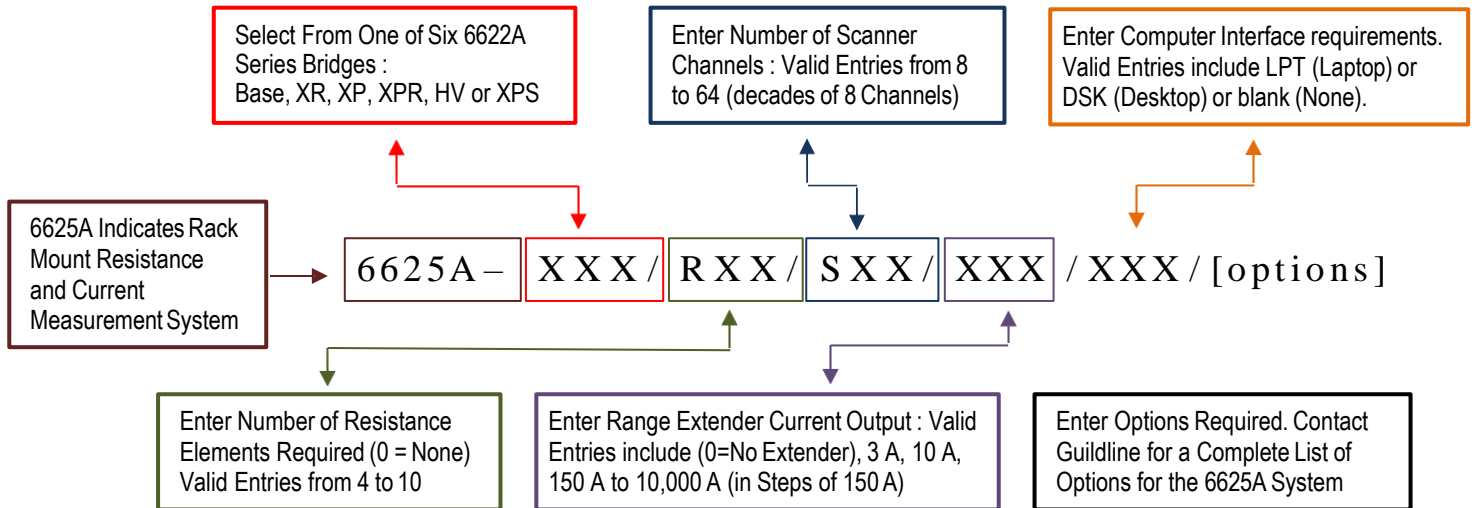
Note 1 – Actual height and weight is dependent on the Number of Scanner Channels and Range Extender Selected. Complete specifications for the Low Ohms Mode can be located on the 6623A Series of Range Extenders Datasheet.

The purchase of a 6625A System allows customers to make precision resistance and current measurements with an ease and capability not previously available. Purchase of a 6625A System protects a customer's initial investment, provides a growth path as requirements change, and enables the expansion of their initial Resistance / Current Measurement System to support new calibration procedures and new test and measurement equipment. Equally important, customers have dramatically reduced capital, training and ongoing life cycle support costs.

# 6625A Series of Resistance and Current Measurement Systems

Equip your calibration laboratory with the best, proven solution – the 6625A System. The 6625A Resistance and Current Measurement System is preferred and used by: leading National Metrology Institutes; militaries such as the US Air Force, US Army, US Navy, and over ten other militaries; National Research Institutes, Nuclear Facilities, NASA and others. More than 175 6625 Systems have been sold world-wide. No other resistance and current measurement system in the world offers these advantages, or this flexibility to customers.

## CONFIGURING YOUR 6625A RESISTANCE AND CURRENT MEASUREMENT SYSTEM



### ORDERING INFORMATION

Example Number: **6625A-XR/R10/S16/X300/LPT/GPIB/TRAY** Includes

6625A*	Precision Resistance and Current Measurement System Includes:
	6625A System Rack, Fans, Ground Plane and FullyWired, Tested
	6622A-XR : DCC Bridge (wired)
	6634A-10 Temperature Stabilized Resistance Standard (Wired)
	6664C/16 : Single 16 Channel Low Thermal Quad Channel Scanner(wired)
	6623A-300 A Range Extender with 20 A, 100 A and 300 A Leads
	Laptop Controller Interface with Bridgeworks Software Installed
	USB GPIB, and Laptop
	Laptop Stow-Away Tray (Installed)
	Technical Manual (Hardware and Software)
	Calibration Certificate and Certificate of Conformance
	2 Year Standard Warranty

### Available Options

/66252	66252 DMM Switch
/Temp	Adds Temperature Option
/Tray	Laptop Stow-Away Tray (Installed)
/66259	Programmable Current Control Unit

GUILDLINE IS DISTRIBUTED BY:



Bât. Les Lauriers - L'Orée des Mas  
Avenue du Golf  
34670 Baillargues - France  
Téléphone : +33(0)9 52 08 08 09  
[contact@evomesure.com](mailto:contact@evomesure.com)  
[www.EvoMeasure.com](http://www.EvoMeasure.com)

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