

Compact Modular Resistance and Current Measurement Systems



**Standard 6625A System
(Laptop Tray not Shown)**

6625A SYSTEM FEATURES

- ◆ Complete Turn-Key System – Fully integrated, wired, tested and ready to use!
- ◆ Widest Available Resistance Range from 1 $\mu\Omega$ ~ 1G Ω with Internal Voltages to 1kVdc
- ◆ Precision Current Source / Range Extension to 10,000 Amps with Built-In Power Supplies 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 Modes of Operation
- ◆ Modular Design, Expandable Capabilities, Investment Protection
- ◆ Change Key parameters “on-the-fly” while Measurements are running in manual and automated modes
- ◆ Optional Built-In Voltages to 1000 Vdc
- ◆ Internal Temperature Option Available
- ◆ BridgeWorks™ Data Acquisition Software
- ◆ Unique Calibration Support Strategy

Guildline Instruments 6625A is a modular Resistance and Current Measurement System providing unique industry leading features and capabilities. The 6625A System is composed of a 6622A Series Bridge with Bridgeworks Software, a 6634A Series with up to ten Resistance Standards, user selectable 6664C Series Scanners and the highly successful 6623A Series of Precision Current Sources / Range Extenders. 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 Resistance Measurement 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 measurement, this System is the only true “turn-key” Resistance and Current Measurement System available today. This System provides the best in measurement specifications and the widest range of options.

The 6625A System is the industry standard replacement system for the historical ESI 242. The 6625A System is built on the foundation of Guildline’s 6625AF Resistance Measurement System which has been deployed at all US Air Force Bases worldwide (over 80 systems), at 9 US Army bases, at the US Navy, and is also used by over ten other militaries worldwide.

Based on the World’s Leading 6625AF System, the 6625A Provides the Most Advanced Resistance and Current Measurement Standard Available Today While Maximizing Flexibility and Expansion Paths For Future Requirements!

Guildline's unique design and modularity allows customers to purchase what they need today to support calibration of their current work-load and be assured of an upgrade path to support their future requirements. The system is typically delivered ready for use in a single ‘fly-away’ rack. In fact, the system as shown including Resistance Standard, Scanner, any Bridge, and a 300 Amp Current Source **is only 35” in total height – less than a meter.**

6625A RESISTANCE AND CURRENT MEASUREMENT SYSTEM

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:

- Standard Base Resistance Measurement from 1 $\mu\Omega$ to 100 M Ω !
- Standard Current to 300 Adc with DC Voltages to 100 Vdc!
- 16 Channels Standard Scanner Rated to 1000V and 2 Amps!
- 10 Element Decade (i.e. 0.1 Ω to 100M Ω) Resistance Standards in a Temperature Stabilized Environment!
- Simple Verification Procedures to ensure the 6625A System remains within operating specifications!
- Resistance Verification Procedure for High End Calibrators like the Fluke 5700A or 5720A Series!
- Verification procedures for Decade Boxes' Calibration!
- Transferring the Traceability of Primary Standards from NMI's or other sources!
- Procedures for DC Shunt Calibration including multi-value Guildline shunts 9210, 9211A or 9711A!
- Optional Current Extenders for measurements down to 1 $\mu\Omega$ at modular currents up to 10,000 Amps!
- Optional Bridge Capabilities that extends Accuracies to as low as 0.02 ppm!
- Optional Bridge Capabilities that extends Range to 1G Ω with voltages to 1000 Vdc (Internally)!
- Optional Scanner Channels up to 64 Channels!
- Optional Resistance Verification of Long Scale Digital Multi-Meters (DMMs) such as the Agilent 3458A and Fluke 8508A with the 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!

Manual and automated operations for Precision Resistance and Current Measurements have never been easier. The 6625A Resistance and Current Measurement System comes standard with one of six Guildline 6622A Series Direct Current Comparator Bridges. The 6622A Series provides an easy-to-use, front panel menu system eliminating in-depth operator learning requirements. 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. The 6625A Resistance and Current Measurement System is the only measurement system in the world where all measurements can be controlled from the front panel or from a connected computer.

Additionally, 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. The 6622A Series are the only Bridge(s) that provides both a manual mode of operation and an automated mode of operation, including the Measurement and Uncertainty Analysis, you need as a Metrologist that meets the requirements of ISO Accreditation for both Resistance and Current measurements.

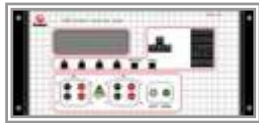


The 6622A Series of Bridges provides unique features and functions for the 6625A Resistance and Current Measurement System. From the modular design and upgradeable paths, to variable ranges and choice of accuracies, to the internally built in voltage supplies, to the unique control of the range extenders, and with a one-size-footprint, the 6622A meets existing requirements as well as being expandable to meet future measurement requirements. Select from one of six available models for your 6625A Resistance Measurement System.

6622A SERIES BRIDGES – MODELS AND EXPANSION PATHS

You can start with our very competitively priced **6622A Base unit**. The 6622A “Base” unit provides an outstanding measurement range of 0.001 Ω to 100 kΩ, with best uncertainties starting at 0.1 ppm. A perfect solution to meet demanding workloads and laboratory budgets. Learn only One Menu and One Software package for all Bridges in this Series.

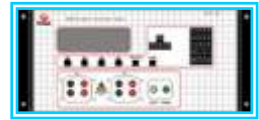
ACCURACY: 0.1 ppm
6622A-BASE
RANGE: 1 mΩ ↔ 100kΩ



workloads and laboratory budgets. Learn only One Menu and One Software package for all Bridges in this Series.

Or start out with the **6622A-XP (eXtended Performance) Model**. This model has the same measurement range as the 6622A Base Model, however the uncertainties of the measurement ranges are significantly enhanced. If you already own the 6622A and now your workload demands better uncertainties, simply return the unit to Guildline and we can expand the 6622A to a 6622A-XP. Instrument control and internal menus will be the same, and your software procedures will still work – the same instrument operation and calibration support but with the improved uncertainties you need!

ACCURACY: 0.05 ppm
6622A-XP
RANGE: 1 mΩ ↔ 100kΩ



workload demands better uncertainties, simply return the unit to Guildline and we can expand the 6622A to a 6622A-XP. Instrument control and internal menus will be the same, and your software procedures will still work – the same instrument operation and calibration support but with the improved uncertainties you need!

The newest addition to our line is the 6622A-eXtended Performance Special accuracy model. This bridge can be upgraded from our Base and XP series only and does not have the extended range available. This bridge was the result of many NMI's asking for the best uncertainties available. Guildline responded with the XPS model. Specially calibrated for 1:1 ratios expect better than 0.02 ppm in the mid-range of this bridge. Note that this is the only bridge that cannot be fitted with the Temperature option.

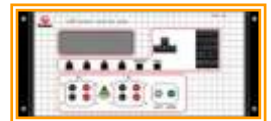
ACCURACY: 0.02 ppm
6622A-XPS
RANGE: 1 mΩ ↔ 100kΩ



of this bridge. Note that this is the only bridge that cannot be fitted with the Temperature option.

Need a **higher measurement range**? Move up to our model **6622A-XR (eXtended Range)**. This laboratory standard provides outstanding working measurement range of 0.001 Ω all the way to 100 MΩ and with an internal 100 V supply. The best part is **No-Buyers Remorse**. If you had previously purchased a 6622A-Base Model, and now your workload has evolved to higher values, simply send the instrument back to Guildline and we will **enhance your 6622A to a 6622A-XR** at a very attractive price.

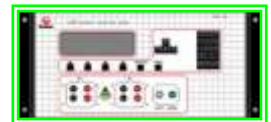
ACCURACY : 0.1 ppm
6622A-XR
RANGE: 1 mΩ ↔ 100MΩ



standard provides outstanding working measurement range of 0.001 Ω all the way to 100 MΩ and with an internal 100 V supply. The best part is **No-Buyers Remorse**. If you had previously purchased a 6622A-Base Model, and now your workload has evolved to higher values, simply send the instrument back to Guildline and we will **enhance your 6622A to a 6622A-XR** at a very attractive price.

Need Primary Laboratory Performance? Our **6622A-XPR** has both the eXtended Performance and Range. Primary Level Performance at a secondary pricing structure and you can expand from any previous 6622A Series model. With 0.05 ppm measurement uncertainties, 100 MΩ range, current extension to 10,000 A, this unit is a true primary laboratory work-horse. As an added bonus, all DCC Bridges within this series come complete with Bridgeworks™ Software.

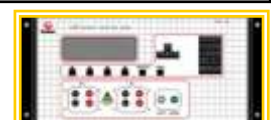
ACCURACY: 0.05 ppm
6622A-XPR
RANGE: 1 mΩ ↔ 100MΩ



primary laboratory work-horse. As an added bonus, all DCC Bridges within this series come complete with Bridgeworks™ Software.

WHY NOT EQUIP YOUR LABORATORY WITH THE BEST! Our 6622A-HV (High Voltage) model has the highest measurement range @1 GΩ, the highest voltage @ 1000Vdc and at 0.02 ppm this standard provides **the ultimate measurement capabilities of any multi-ratio DCC Bridge available today**. You can expand from the 6622A-Base to the 6622A-XR or the 6622A-XP, and from all of these bridge models to the 6622A-XPR and the 6622A-HV. Innovation, performance, and investment protection delivered with the **ultimate in expansion flexibility!**

ACCURACY: 0.03 ppm
6622A-HV (1kVdc)
RANGE: 1 mΩ ↔ 1 GΩ



ultimate in expansion flexibility!

6625A RESISTANCE AND CURRENT MEASUREMENT SYSTEM

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 modes, one feature allows the bridge to provide automatic 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.

The manual mode of operation capabilities of the 6622A Series are impressive and this unique functionality improves the range of equipment that can be supported; and the efficiency of NMI, military and other calibration laboratories. 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.

6625A SYSTEM RESISTANCE STANDARD

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 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 ohm to 100 Megohms. Each resistance element is isolated and has a 4 terminal connection at the back panel. The resistance elements are maintained at 30 ± 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.

6634A Resistance Standard Specifications					
Nominal Resistance	Nominal Initial Tolerance (+/- ppm)	24 Hour Stability (+/- ppm)	12 Month Stability (+/- ppm)	Temp Coefficient (+/- ppm/°C)	Maximum Voltage (Volts)
0.1	10	0.1	3	0.01	0.1
1	10	0.01	2	0.005	0.32
10	10	0.01	2	0.005	1.0
100	10	0.01	2	0.005	3.2
1k	10	0.01	2	0.005	10
10k	10	0.01	2	0.005	32
100k	15	0.02	5	0.01	100
1M	25	0.04	5	0.02	320
10M	35	0.2	6	0.2	1000
100M	50	0.5	15	0.2	1000

6625A 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 Amps and 1000 Volts. 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 SYSTEM RANGE EXTENDER (6623A SERIES)

The PATENTED Guildline 6623A Series of Range Extenders/Precision Current Sources extends the 6625A current capabilities of the 6622A Series Bridge from 150 Amps to up to 10,000 Amps. For up to 300 Amps only a single 120V, 15 Amp circuit is required. The heart of the 6623A design is our 150A uni-polar precision current supply pictured on the left.



left. Guildline's newly designed and innovative internal power supply used in the 6623A series eliminates the costly requirements for purchasing external power supplies, use of external switches and compressed gas, and even the software programming difficulties associated with implementing these external components. This means the 6623A can provide 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 Amps of current, you simply enter 300 Amps 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 available today. Running on 120 VAC for models up to 300 Amps, the 300 Amp model is only 4U (7 inches) in total height. That is the complete precision current source with electronic switching in a single frame! The 450 to 600 Amp models are only 5U (8.75") in total height. If you need to go higher, the 1000 Amp model is 10U in height while moving up to 3000 Amps 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.

6625A RESISTANCE AND CURRENT MEASUREMENT SYSTEM

A COMPLETE TURN-KEY SOLUTION

The quality of the 6625A system extends to the Standards 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 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 with ALL highest quality wiring installed, tested and marked!

A complete 6625A-300 Amp Resistance and Current Measurement System capable of measurements down to $1 \mu\Omega$ with currents to 300 Amps and all the way up to $1G\Omega$ at 1000 Volts can be placed in 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 – easy to use system. The best in performance coupled with complete automation and modularity - That's Guildline's philosophy.

AVAILABLE 6625A UPGRADES AND OPTIONS.

The modularity of the 6625A System is based on over 55 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 0.04 or 0.02 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 2nd bridge to obtain increased accuracy!

Voltage Extension: Internally installed voltage module that allows operation at 1000 V to provide better measurements and uncertainties for higher value resistance standards, typically above 100k Ω . With Guildline's solution there is no need to purchase a second voltage bridge or external voltage sources.

Expanded Resistance Measurement Range: From 100k Ω up to an expanded 1G Ω range. There is no need to purchase a second voltage bridge to cover the extended range of standard resistors. Need to go even higher? Add one of our four available Programmable 6530 TeraOhm Bridge-Meters 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 Amps, in modular 150A and/or modular 1000A extenders. This represents substantial setup and ongoing operating cost savings in comparison to range extenders from other companies which need multiple external 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 Amps. Alternatively the 6623A Precision Current Sources can be purchased separately, along with the 66259 Current Controller, and used to generate currents for measuring shunts.

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 Bridge to also be used as a fully functional Temperature Bridge. 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 and as well as statistically. A customer simply has to select either Resistance or Temperature mode from 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 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 for each requirement. With this modular design, there is no reason to incur any engineering or design costs for your system requirements.

A modular design also allows the standards to be individually tailored to a customer's requirement. Specifications for individual standards can be located on data sheets for each standard (www.guildline.com). Using one of the most popular configurations sold today, an example 6625A specification is provided on the next page. This is a complete system specification. This configuration is for a 6625A System with a 6622A-XR Bridge, a 6664C Scanner, and a 6623A-300 Amp Range Extender.

6625A RESISTANCE AND CURRENT MEASUREMENT SYSTEM

6625A System specifications listed below are a two sigma, absolute specification (Including all secondary specifications) for the standards listed and in a laboratory environment of 23°C +/- 2°C. These specifications do not include the reference resistance standard, but resistance standard specifications are listed in the datasheet for the Guildline 6634A Series. Or the customer merely has to add their own charted specifications to the following analysis.

EXAMPLE 6625A SYSTEM RANGE MEASUREMENT SPECIFICATIONS WITH A 6622A-XR SERIES BRIDGE!

<h1>6622A-XR</h1> XP Range: 1 mΩ ◀ ▶ 100 MΩ		Low Ohms Ratios ¹				
		R _s 1 Ω ▶	± 0.8 ppm	± 0.7 ppm		
		NOMINAL RATIO ▶	0.001:1		0.01:1	
		ACTUAL RATIO ▶	0.008 > Rx < 0.08		0.8m > Rx < 0.008	
INTERCHANGE ¹ SPECIFICATION	RESISTANCE STANDARD	3 YEAR RATIO SPECIFICATIONS ²				
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 6623A-300 Amp Range Extender (Complete System Measurement Specifications with 6622A-XR Bridge, 6623A Internal Power Source and Switching, 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 ~ 100 Ω
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 XR Bridge	± 15 ppm	± 8 ppm	± 2 ppm	± 0.8 ppm	± 0.7 ppm	± 0.7 ppm

6625A RESISTANCE AND CURRENT MEASUREMENT SYSTEM

Listed are general specifications for the 6625A system based on the previously described system with coverage factor @ 95% (k=2). Note that height and weight are based on a 6625A 36 inch rack, fully wired including standard grounding plane, rear door and fans, a power bar, a 6634A Resistance Standard, 6622A-XR Bridge, 6664C-16 Channel Scanner, 6623A-300 Amp 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 1second	
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 Amp System Dimensions (Width x Height x Depth) ¹			Weight
445 mm x 914 mm x 762 mm		17.5" x 36" x 30"	95 kg 210 lbs

Normal Ohms Operation 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
High Ohms Mode Test Voltage Specifications with 6622A-XR Series Bridge	V _{DC} 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
Low Ohms Mode Specifications Specifications for 300 Amp Model		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 480 W)

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

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.

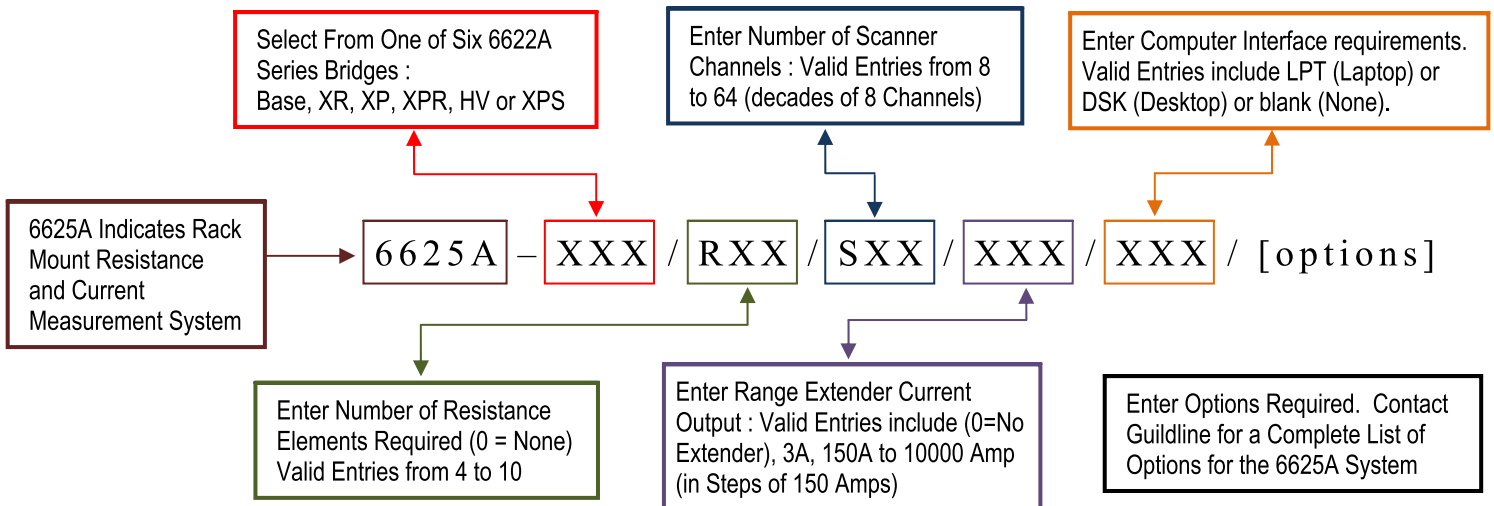
6625A RESISTANCE AND CURRENT MEASUREMENT SYSTEM

Equip your calibration laboratories with the best, proven solution – the 6625A System. The preferred Resistance and Current Measurement System that is being used by: leading National Metrology Institutes; militaries such as the US Air Force, US Army, and over ten other militaries; National Research Institutes, Nuclear Facilities, NASA and others. More than 150 6625 Systems have been sold world-wide. No other resistance and current (and with options temperature) measurement system in the world offers these advantages, or this flexibility to customers.

WARRANTY

Over 50 Years of Guildline innovation in engineering and design has resulted in very reliable products. This is reflected by Guildline’s industry leading 2-Year Warranty for all 6625A System components and covers both parts and labor.

CONFIGURING YOUR 6625A RESISTANCE 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 Fully Wired, 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 Amp Range Extender with 20A, 100A 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 (More Added on a Regular Basis)	
/66252	66252 DMM Switch
/Temp	Adds Temperature Option
/Tray	Laptop Stow-Away Tray (Installed)
/66259	Programmable Current Control Unit

GUILDLINE IS DISTRIBUTED BY:



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Walworth Business Park,
Andover, Hampshire SP10 5NX

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Call: 01264 316470

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