MODEL EPAX- 5 DIGIT EXTRA LARGE PAX DISPLAY FOR ANALOG INPUTS

c UL US LISTED
IND. CONT. EQ.
51EB

CE

- *LARGE LED DISPLAY READABLE TO 180 FEET*
- *VARIOUS ANALOG INPUT MODULES;*
  - *DC VOLTAGE AND CURRENT*
  - *PROCESS SIGNALS*
  - *TRUE RMS VOLTAGE AND CURRENT*
  - *THERMOCOUPLE OR RTD*
  - *STRAIN GAGE/BRIDGE*
- *ALARMS, ANALOG OUTPUT, AND COMMUNICATION*
- *PROGRAMMABLE USER INPUTS*
- *UNIVERSAL AC POWERED (85 to 250 VAC)*
- *CRIMSON PROGRAMMING SOFTWARE*
- *NEMA 4X/IP65*

GENERAL DESCRIPTION

The EPAX is a versatile display that can increase productivity by offering the plant floor or production area a large visual display of their current status. Whether your measurement is voltage, current, process, temperature, or strain gage, the EPAX can satisfy your requirement. The EPAX accepts various analog inputs through the use of input modules (MPAX) which allow the unit to adapt to most any application. The MPAX Modules offer the same features as our highly successful PAX Series Panel Meters. Additional plug-in option cards can add alarms, analog output, and communication/bus capabilities, making the EPAX a truly Intelligent Panel Meter.

SAFETY SUMMARY

All safety regulations, local codes and instructions that appear in this and corresponding literature, or on equipment, must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

The protective conductor terminal is bonded to conductive parts of the equipment for safety purposes and must be connected to an external protective earthing system.

CAUTION: Risk of Danger
Read complete instructions prior to installation and operation of the unit.

CAUTION: Risk of electric shock.

SPECIFICATIONS

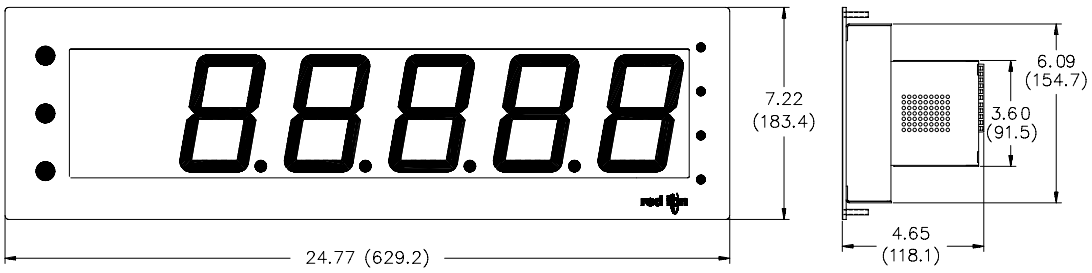
Additional specifications, wiring, programming, and information for the individual MPAX models are contained in the corresponding standard PAX literature. This PAX literature is shipped with the ordered MPAX model.

1. **DISPLAY**: 4" (101 mm) Red LED
   5-Digit (EPAX0500): -19999 to 99999
2. **POWER REQUIREMENTS**:
   AC MPAX Modules: 85 to 250 VAC, 50/60 Hz, 18 VA
   EPAX Display: 85 to 250 VAC, 50/60 Hz, 10 VA
3. **INPUT**: Accepts analog input modules, see "Selecting Your Display Components and Option Cards."
4. **ANNUNCIATORS**:
   Display Indication: Three vertical dots on the left side of the unit identify the displays for the following modes:

TOP	Maximum
MIDDLE	Minimum
BOTTOM	Total

   Setpoint Indication: Four vertical dots on the right side of the unit identify the setpoint "ON" condition, with SP 1 being the top position through SP 4 at the bottom.
5. **EPAX Programming**: The unit is a large display, designed to be remotely mounted. Therefore, the unit does not have a programming keypad. Unit programming should be accomplished by one of the following methods:
   Rear Terminal Block: External switches can be wired via the terminal block to allow unit programming. A minimum of 3 switches would be required.
   Optional Programming Remote (EPAXPGM0): This option provides a 10 foot interconnecting cable and programming box. The Programming Remote contains buttons similar to the PAX, allowing easy programming of the EPAX display.
   Optional Serial Programming: Like all PAX units, you can purchase an RS232 or RS485 Comms Card and program the unit via Crimson, a Windows® based software program.

DIMENSIONS *In inches (mm)*



6. **CERTIFICATIONS AND COMPLIANCES**:
SAFETY
UL Recognized Component, File #E179259, UL61010A-1, CSA C22.2 No. 1010-1
Recognized to U.S. and Canadian requirements under the Component Recognition Program of Underwriters Laboratories, Inc.
UL Listed, File #E137808, UL508, CSA C22.2 No. 14-M95
LISTED by Und. Lab. Inc. to U.S. and Canadian safety standards
Type 4X Indoor Enclosure rating (Face only), UL50
IECEE CB Scheme Test Certificate #US/8843A/UL
CB Scheme Test Report #04ME11209-20041018
Issued by Underwriters Laboratories, Inc.
IEC 61010-1, EN 61010-1: Safety requirements for electrical equipment for measurement, control, and laboratory use, Part 1.
IP65 Enclosure rating (Face only), IEC 529
ELECTROMAGNETIC COMPATIBILITY
EMC specifications determined by the MPAX module.
7. **ENVIRONMENTAL CONDITIONS**:
Operating Temperature Range: Determined by the MPAX module
Storage Temperature Range: -40 to 60°C
Operating and Storage Humidity: 0 to 85% max. RH (non-condensing)
Altitude: Up to 2000 meters
8. **MOUNTING REQUIREMENTS**:
Max. panel thickness is 0.375" (9.5 mm)
Min. panel thickness for NEMA 4/IP65 sealing is 0.060" (1.52 mm)
9. **MODULE INSTALLATION**:
24-pin shrouded connector on EPAX engages connector on MPAX module upon installation. Shroud ensures proper alignment by providing a lead-in for the module connector.
10. **CONNECTIONS**: Wiring connections are made to the EPAX terminal block and MPAX module via high compression cage-clamp terminal blocks.
MPAX Module Wiring: Instructions are provided in the corresponding PAX Bulletin.
EPAX Terminal Block Wiring:
Wire Strip Length: 0.3" (7.5 mm)
Wire Gage: 30-12 AWG copper wire
Maximum Torque: 5-7 inch-lbs (0.58-0.81 N-m)

CAUTION: DISCONNECT ALL POWER BEFORE INSTALLING OR REMOVING MODULE

11. **CONSTRUCTION**: Aluminum front panel, enclosure, and rear cover with textured black polyurethane paint for scratch and corrosion resistance protection. Sealed front panel meets NEMA 4X/IP65 specifications for indoor use when properly installed. Installation Category II, Pollution Degree 2. Panel gasket and keps nuts included.
12. **WEIGHT**: 5 lbs (2.25 kg) (*less module*)

About the MPAX Input Modules

The MPAX Module serves as the input to the EPAX Display. There are several different modules to cover a variety of inputs. The MPAX module provides input scaling which allows the EPAX to display most any engineering unit. Once the MPAX is inserted into the EPAX, the unit has the same functions and capabilities of our PAX Series Intelligent Panel Meters. A full set of PAX programming instructions will be included with the MPAX module.

Selecting Your Display Components and Option Cards

To build a complete display unit, you will need an EPAX and an MPAX Input Module. The EPAX is only a display and will not operate without an MPAX module. Please use the following chart to identify the appropriate MPAX module and EPAX Display that will satisfy your application.

SIGNAL TYPE	MPAX MODULES*	EPAX DISPLAYS	OPTIONAL PLUG-IN CARD COMPATABILITY		
	85-250 VAC		SETPOINT	COMMS	ANALOG
Universal DC Inputs	MPAXD000	EPAX0500	YES	YES	YES
Process Inputs	MPAXP000	EPAX0500	YES	YES	YES
Temperature Inputs	MPAXT000	EPAX0500	YES	YES	YES
Strain Gage/Loadcell	MPAXS000	EPAX0500	YES	YES	YES
True RMS AC Voltage/Current	MPAXH000	EPAX0500	YES	YES	YES
Dual Process Inputs	MPAXDP00	EPAX0500	YES	YES	YES

* For detailed module and plug-in card specifications, see corresponding PAX literature. (i.e. For MPAXD specifications, see the PAXD literature)

OPTIONAL PLUG-IN CARDS AND ACCESSORIES

WARNING: Disconnect all power to the unit before installing Plug-in cards.

Adding Option Cards

The PAX and MPAX series meters can be fitted with up to three optional plug-in cards. The details for each plug-in card can be reviewed in the specification section of the PAX Bulletin. Only one card from each function type can be installed at one time. The function types include Setpoint Alarms (PAXCDS), Communications (PAXCDC), and Analog Output (PAXCDL). The plug-in cards can be installed initially or at a later date.

SETPOINT ALARMS PLUG-IN CARDS (PAXCDS)

The PAX and MPAX series has 4 available setpoint alarm output plug-in cards. Only one of these cards can be installed at a time. (Logic state of the outputs can be reversed in the programming.) These plug-in cards include:

PAXCDS10 - Dual Relay, FORM-C, Normally open & closed
PAXCDS20 - Quad Relay, FORM-A, Normally open only
PAXCDS30 - Isolated quad sinking NPN open collector
PAXCDS40 - Isolated quad sourcing PNP open collector

ANALOG OUTPUT PLUG-IN CARD (PAXCDL)

Either a 0(4)-20 mA or 0-10 V retransmitted linear DC output is available from the analog output plug-in card. The programmable output low and high scaling can be based on various display values. Reverse slopes output is possible by reversing the scaling point positions.

PAXCDL10 - Retransmitted Analog Output Card

COMMUNICATION PLUG-IN CARDS (PAXCDC)

A variety of communication protocols are available for the PAX and MPAX series. Only one of these cards can be installed at a time. When programming the unit via Crimson, the RS232 or RS485 Cards must be used.

PAXCDC10 - RS485 Serial (Terminal) PAXCDC1C - RS485 Serial (Connector)
PAXCDC20 - RS232 Serial (Terminal) PAXCDC2C - RS232 Serial (Connector)
PAXCDC30 - DeviceNet
PAXCDC40 - Modbus (Terminal) PAXCDC4C - Modbus (Connector)
PAXCDC50 - Profibus-DP

PROGRAMMING SOFTWARE

Crimson is a Windows® based program that allows configuration of the EPAX meter from a PC. Crimson offers standard drop-down menu commands, that make it easy to program the EPAX meter. The EPAX program can then be saved in a PC file for future use. A PAX serial plug-in card is required to program the meter using the software.

ORDERING INFORMATION

TYPE	MODEL NO.	DESCRIPTION	PART NUMBERS
Display	**EPAX**	5-Digit Extra Large Display for Analog MPAX Modules	EPAX0500
Analog Input Module	**MPAX**	Universal DC Input Module, AC Powered	MPAXD000
		Dual Process Input Module, AC Powered	MPAXDP00
		Process Input Module, AC Powered	MPAXP000
		Thermocouple and RTD Module, AC Powered	MPAXT000
		AC True RMS Voltage and Current Module, AC Powered	MPAXH000
		Strain Gage/Bridge Input Module, AC Powered	MPAXS000
Plug-In Cards	**PAXCDS**	Dual Setpoint Relay Output Card	PAXCDS10
		Quad Setpoint Relay Output Card	PAXCDS20
		Quad Setpoint Sinking Open Collector Output Card	PAXCDS30
		Quad Setpoint Sourcing Open Collector Output Card	PAXCDS40
Plug-In Cards	**PAXCDC***	RS485 Serial Communications Output Card with Terminal Block	PAXCDC10
		Extended RS485 Serial Communications Output Card with Dual RJ11 Connector	PAXCDC1C
		RS232 Serial Communications Output Card with Terminal Block	PAXCDC20
		Extended RS232 Serial Communications Output Card with 9 Pin D Connector	PAXCDC2C
		DeviceNet Communications Card (Terminal Block)	PAXCDC30
		Modbus Communications Card	PAXCDC40
		Extended Modbus Communications Card with Dual RJ11 Connector	PAXCDC4C
		Profibus-DP Communications Card	PAXCDC50
	PAXCDL*	Analog Output Card	PAXCDL10
Accessories	**PGM**	Programming Remote for EPAX with 10 foot cable	EPAXPGM0
	SFCRD**	Crimson 2 PC Configuration Software for Windows 98, ME, 2000 and XP	SFCRD200
	ENC12	NEMA 4/IP65 Enclosure for EPAX	ENC12000
	SHR	Shroud for EPAX	SHREPAX0
	EN/SH	EPAX NEMA 4/IP65 Enclosure and Shroud	EPAXENSH

*Refer to “Selecting Your Display Components and Option Cards.”

TROUBLESHOOTING

For technical assistance, contact technical support.

LIMITED WARRANTY

The Company warrants the products it manufactures against defects in materials and workmanship for a period limited to two years from the date of shipment, provided the products have been stored, handled, installed, and used under proper conditions. The Company’s liability under this limited warranty shall extend only to the repair or replacement of a defective product, at The Company’s option. The Company disclaims all liability for any affirmation, promise or representation with respect to the products.

The customer agrees to hold Red Lion Controls harmless from, defend, and indemnify RLC against damages, claims, and expenses arising out of subsequent sales of RLC products or products containing components manufactured by RLC and based upon personal injuries, deaths, property damage, lost profits, and other matters which Buyer, its employees, or sub-contractors are or may be to any extent liable, including without limitation penalties imposed by the Consumer Product Safety Act (P.L. 92-573) and liability imposed upon any person pursuant to the Magnuson-Moss Warranty Act (P.L. 93-637), as now in effect or as amended hereafter.

No warranties expressed or implied are created with respect to The Company’s products except those expressly contained herein. The Customer acknowledges the disclaimers and limitations contained herein and relies on no other warranties or affirmations.