CANBERRA

Features

- Stand-alone operation or integrated computer-based system
- Connectivity to both Area and Process monitor type probes – Alpha, Beta, Gamma and Neutron detection – low and high intensity radiation fields
- Supports simultaneously up to three "SMART" detector probes
- Dependable and user friendly interface features, including SI units display
- Key switch to prevent unauthorized use or changes to settings
- Extended control and communication, serial RS-485
- Analog and digital inputs/outputs
- Self diagnostic and minimum maintenance
- Data protection with non-volatile memory and lithium battery backup
- Two operational modes – Local or Remote
- Custom firmware configurations supported

Quality

- Commitment to meet or exceed your quality expectations
- Cost-effective for safety and compliance

ADM606 Multifunction Control and Display Unit

Description

The ADM606 is a microprocessor controlled digital ratemeter, designed to power, control and process data from various types of Canberra radiation detectors. The ADM606 can operate with both area and process monitor type detectors for measurement of many types of both low and high intensity radioactivity. The Area Monitor type detectors consist of detectors designed for open area detection of gamma or neutron radiation. The Process Monitor type detectors monitor alpha/beta/gamma activity and are designed to mount in fluid or gas flow streams such as ventilation ducts, stacks or liquid piping systems.

Each ADM606 controls and processes data from Canberra detectors, Scintillation – MD Series, Geiger Müeller – GP Series, Ion Chamber – IP Series, and Neutron – NP Series. When the ADM606 is configured for local operation, it reads the attached SMART Probe detectors and downloads calibration and scaling parameters from the detectors. For each attached detector, the ADM606 provides radiation intensity displays, alarm set point, and other control and readout functions.

The ADM606 can be installed as one of a possible three units mounted in a 19 in. wide by 7 in. tall NIM style rack. The ADM is interfaced directly to a Rear Termination Panel Assembly, CR600TP. The CR600TP and optional CR600CIP, Customer Interface Panel provides terminal blocks connections to relay contacts, communication ports, and analog and digital inputs/outputs.

The ADM606 provides the following user interface features: 2 lines x 20 characters vacuum fluorescent display, six button membrane switch keypad, three position key switch, four LED indicators, and a RS-232 serial port.

The ADM606 also provides the following control and communication circuitry with connections made through the Termination panel, CR600TP: Eight Single Pole Double Throw (SPDT) relays, all rated at 0.5 A at 120 V ac or 1.0 A at 30 V dc resistive load.

ADM606 Multifunction Control and Display Unit

The optional Customer Interface Panel, CR600CIP provides terminal block connections for: Five Double Pole Double Throw relays (DPDT) and one Single Pole Double Throw relay, all rated at 5 A at 120 V ac or 28 V dc resistive load, four Isolated 4-20 mA analog outputs and three Isolated RS-485 communication ports. The Analog Outputs are proportional to the dose rate for area monitors or count rate/concentration for process monitors.

The ADM606 allows configuration of the alarms to be latching or non-latching and to configure the alarm relays as normally energized (de-energized on alarm, failsafe) or normally de-energized (energize on alarm). In latching mode, the alarm indicators continue to indicate alarm until after the rate drops below the alarm setpoint and the operator has pressed the Reset button. In non-latching (or tracking mode), the alarm indicators automatically reset when the rate drops below the alarm setpoint.

When used in the local configuration, ADM606 supports Canberra's proprietary Time-to-Count* technology and LED-based gain stabilization for scintillation detectors for enhanced RMS performance.

The ADM606 can be used in a remote configuration when it can interface with other ratemeters such as ADM606M, ADM616, ADM616S or Tritium Monitor units such as TAM100D/T100DSI, or TAM73D/T73DSI.

Specifications

Performance
RANGE – Six-decade; up to 12 decades with range switching; auto-ranging, auto-zero.

Physical
OPERATING TEMPERATURE – -10 °C to +50 °C (+14 °F to +122 °F).

OPERATING HUMIDITY – 0% to 95% non-condensing.

HOUSING – 5 ¼ in. NEMA module, mounted as one out of possible three units in CR600 bin.

WEIGHT – 2.3 kg (5 lb).

CR600 BIN SIZE – 48.3 x 17.8 cm (19 x 7 in.) (W x H).

Power
AC LINE POWER – 100 V to 130 V ac , 47-63 Hz, 0.5 A maximum input current.

MEMORY BACKUP – Lithium battery for data retention; system parameters in non-volatile EEPROM memory.

Controls
KEYPAD – Six-button flat panel membrane switch for control of operating and display functions. Touch pad buttons allow control of the operating mode, display scale, alarm acknowledge and test, input of data, and check source position.

KEYLOCK SWITCH – Three-position key switch:

OFF: ac power off (key in or out).

KEYPAD: operate or set parameters (key in only mode).

ON: ac power on, operate-only mode (key in or out).

Displays and Alarms
MAIN DISPLAY – 2 lines x 20 characters, vacuum fluorescent display. Top line is used to display rate information for a detector. The bottom line is used to display a bargraph, a second detector rate, or a status and failure messages alternatively.

UNITS OF MEASURE – US or SI units.

STATUS LIGHTS – Incandescent lamp.

CONDITION	VISUAL	AUDIBLE
NORMAL:	Green	–
FAIL:	White	Tone
ALERT:	Amber	Tone
HIGH	Red	Tone

AUDIBLE ALARM – Sonalert® audio alarm, 90 dB at 0.9 m (3 ft).

CR600TP Relay Configuration

Alarm	No	Config.
High Alarm, Probe 1	K1	ND/L
High Alarm, Probe 2	K2	ND/L
High Alarm, Probe 3	K3	ND/L
Alert Alarm, Common	K4	ND/L
Fail Alarm, Common	K5	NE/L
Audio	K6	
Undefined	K7	
Undefined	K8	

CR600CIP Relay Configuration

Alarm	No	Config.
High Alarm, Probe 1	K1	ND/L
High Alarm, Probe 2	K2	ND/L
High Alarm, Probe 3	K3	ND/L
Alert Alarm, Common	K4	ND/L
Fail Alarm, Common	K5	NE/L
Undefined	K6	

Communications
SERIAL PORTS

Port, Availability	Type	Baud
COM1, Front Panel	RS-232	2400
COM2, CR600CIP	RS-485	9600
COM3, CR600CIP	RS-495	19200
COM4, CR600CIP	RS-485	19200

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Input/Output

DIGITAL INPUTS/OUTPUTS –

Six digital inputs (CMOS signal levels); two lines available through CR600TP and four lines available through CR600CIP.

ANALOG INPUTS –

Three non-isolated, 0-10 V dc, available through CR600TP.
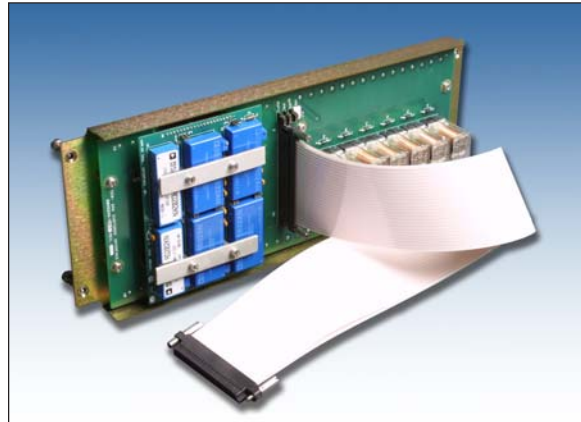
Two isolated, 0-10 V dc, available through CR600CIP.

ANALOG OUTPUTS –

Two non-isolated outputs, 0-10 V dc, available through CR600TP.

Four isolated 4-20 mA outputs, available through CR600CIP.

CR600CIP provides the option for isolated outputs: 0-5 V, 1-5 V, 0-10 V, 2-10 V dc (impedance of 250 Ohm for 5 V and 500 Ohm for 10 V).

Analog Output 1	Probe Rate 1	1.0×10^{-1} to 1.0×10^{5}, six decade
Analog Output 2	Probe Rate 2	1.0×10^{-1} to 1.0×10^{5}, six decade
Analog Output 3	Probe Rate 3	1.0×10^{-1} to 1.0×10^{5}, six decade
Analog Output 4	Probe Rate 1	1.0×10^{3} to 1.0×10^{9}, six decade

CONFIGURATION NOTES– The optional Customer Interface Panel, CR600CIP connects to the CR600TP via a 50-conductor ribbon cable, CR600RC. Also, the Customer Interface Panel is mounted to a special bracket supplied with the CR600 NIM.

Custom firmware configurations are available.

Quality

The ADM606 is designed and manufactured under a quality system in compliance with the following standards and requirements:

- ISO 9001
- 10CFR21
- 10CFR50, Appendix "B"
- IEEE-730
- ANSI/ASME NQA-1, ANSI/ASME NQA-2, Part 2.7

ISO 9001 SYSTEM CERTIFIED