



ADM606 Rackmount Multifunction Ratemeter/Scaler

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

- 10CFR50 App. B QA, non-safety or optional 1E safety
- Seismically qualified

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 monitoring detectors for measurement of many types of low and high intensity radioactivity. The area monitoring detectors are designed for open area detection of gamma or neutron radiation. Process monitoring detectors detect alpha/beta/gamma activity and are designed to mount in fluid or gas flow streams such as ventilation ducts, stacks or liquid piping systems.

The ADM606 is designed to take full advantage of the features of the CANBERRA “SMART” detector series, it also can operate with conventional detectors, or with a combination of conventional and “SMART” detectors. When coupled with the “SMART” detectors, the ADM606 interrogates each connected probe to determine the detector type and calibration constants, then automatically sets the display of measurement type and units for that measurement channel. This feature allows for quick detector swapout, and permits factory calibration of detectors rather than time consuming in-field calibration of each monitoring station.

The ADM606 can be installed as one of a total of three units mounted in a 19 in. wide by 7 in. tall CR600 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 block 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.

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, 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.



Three ADM606 Ratemeters shown in CR600 rack configuration.

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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 unique 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 in a control room where it can interface with other field-installed ratemeters such as the iR7040, ADM606M, ADM616 or Tritium Monitors such as the TAM100D/T100DSI, or TAM73D/T73DSI.

Specifications

PERFORMANCE

- RANGE – Six-decade; up to 12 decades with range switching; auto-ranging, auto-zero depending on detector type.

PHYSICAL

- OPERATING TEMPERATURE – -10 °C to +50 °C (+14 °F to +122 °F).
- OPERATING HUMIDITY – 20% to 95% non-condensing.
- Meets the environmental conditions specified by EN 61010, Installation Category I, Pollution Degree 2.
- HOUSING – 5 ¼ in. 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 – 115 V ac ±10%, 50/60 Hz ±5%, 60 VA, 3 wire, circuit rated to 0.75 A maximum, on CR600CIP or 3-wire connector on CR600TP.
- MEMORY BACKUP – Data history log and real time clock are backed up with internal lithium battery.
- Configuration parameters survive power loss because they are stored in EEPROM.

CONTROLS

- KEYPAD – Six-button flat panel membrane switch for control of operating and display functions. 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 second detector rate, or a status or failure message.

- UNITS OF MEASURE – US or SI units.

- STATUS LIGHTS – LED.

<u>Condition</u>	<u>Visual</u>
NORMAL:	Green
FAIL:	White
ALERT:	Amber
HIGH	Red

- External horn using CR600TP Relay.

- Up to eight relays on CR600TP and CR600CIP can be configured as latching/non-latching and as failsafe for High, and Fail alarms.

Communications

SERIAL PORTS

Port, Availability	Baud	Connection
COM1: RS-232	2400	3-wire Hiroshi connector on ADM606 front panel (special cable available option)
COM2: RS-485	9600	3-wire at CR600CIP
COM3: RS-485	19200	3-wire at CR600CIP
COM4: RS-485	19200	3-wire at CR600CIP

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INPUT/OUTPUT

- PROBE INPUTS – Three at CR600TP.
- ANALOG INPUTS – Five.
 - Three non-isolated, 0-10 V dc through CR600TP.
 - Two non-isolated, 0-10 V dc or 4-20 mA, at CR600CIP (isolated with CR600OPT).
- DIGITAL INPUTS – Six CMOS-type sourcing or sinking (four at CR600CIP and two at CR600TP).
- ANALOG OUTPUTS – Assignable to four channels (e.g. log10 of probe measurement).
 - Four non-isolated 4-20 mA at CR600CIP.
 - Two non-isolated 0-10 V dc at CR600TP (concurrent with CR600CIP).
 - CR600OPT converts CR600CIP to four isolated outputs: 0-5 V, 1-5 V, 0-10 V, 2-10 V dc (impedance of 250 Ohm for 5 V or 500 Ohm for 10 V) or 4-20 mA.
- RELAYS – Assignable to eight functions.
 - Eight SPDT at CR600TP.
 - Six DPDT at CR600CIP (concurrent with CR600TP).

CONFIGURATION NOTES

- Firmware options are available to use MD Series scintillator detectors, ICP100 series ion chamber detectors, assign other functions to inputs and outputs or enable other functions.
- The ADM606 can be installed as one of a total of three units mounted in a 19-inch wide by 7-inch tall CR600 rack-mounted chassis, ordered separately.
- Each ADM606 requires one Termination Panel, model CR600TP, ordered separately, to provide minimal connections.
- Additional connections are available by connecting CR600TP to Customer Interface Panel, model CR600CIP, using ribbon cable CR600RC, each ordered separately.
- CR600CIP analog inputs and outputs can be isolated with Optical Isolation PCB, model CR600OPT, ordered separately, that mounts onto the CR600CIP.

QUALITY

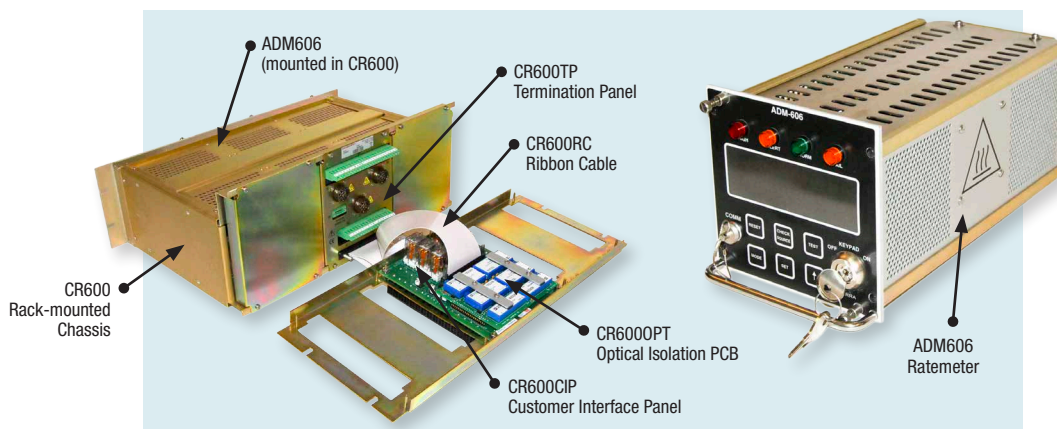
- The ADM606 is designed and manufactured under a quality system in compliance with the following standards and requirements:
- ISO 9001
- 10CFR21
- 10CFR50, Appendix “B”
- IEEE-730
- ANSI/ASME NQA-1, ANSI/ASME NQA-2, Part 2.7

ORDERING INFORMATION

- ADM606 – Rack Mount Ratemeter, requires rack mount accessories (below).

Accessories (not included).

- CR600 – 19” Rack Mount Chassis, for ADM606. Holds up to 3 ADM606 Ratemeters.
- CR600CIP – Customer Interface Panel, with relay outputs (ADM606).
- CR600OPT – Optically Isolated Output Module for ADM606.
- CR600RC – Ribbon Cable – Rear termination panel to CIP for ADM606.
- CR600TP – Rear Termination Panel for ADM606.



ADM606 and rack mount accessories.