

## Electronic Drum Level Indicator

### SYSTEM SPECIFICATION

**Inputs** - Discrimination between water and steam for 14 independent channels numbered in ascending order. Discrimination threshold may be selected for minimum water conductivities of, 0.5, 1 or 2 $\mu$ S/cm. The lower 8 probe channels have a single wire connection to the probe and the upper 6 channels have a two wire connection to each probe. Any wire disconnection on the lower Probes reverts the channel to steam indication if the probe is immersed in water and any disconnection on the upper Probes reverts the channel indication to water in immersed in steam ; this facility enhances fault declaration by way of a Yellow flashing LED.

**ENCLOSURE** - Wall mounted glass-fibre reinforced polyester, offering IP65/NEMA4X protection for location in harsh environments. Dims: 320H x 200W x 120D (mm)  
Temperature Rating: Ambient: - 10 C to 65 C Storage: 50 C to 100 C.

**POWER SUPPLY** - The system uses two independent AC sources: 90 - 265 Volts AC @ 15 VA, 48 - 63Hz. The 202 unit provides improved operational integrity in the event of one Mains supply failure by the unique method of implementing DC supplies to the electronic circuitry.

**DISPLAY** - The unit incorporates a Two vertical column display of 10mm square LED's on the front of the enclosure. The green LED's represent water and Red LED's represents steam. Particular LED's can be selected to flash on initiation of Alarm levels. A Yellow LED flashes for a fault state.

**OUTPUTS** - Alarm/Trip Relays. Four sealed relays, each having singlepole changeover contacts provide Alarm and Trip signalling. Each relay may be programmed for the normally energised or de-energised state with delay action period of 0, 5, 10 or 15 secs. Two relays for low and high level alarms may be linked to channels in the range 3 to 6 and 9 to 12. A low and high channel may be linked to the relay for a combined Lo/Hi alarm. The two trip relays provide low level and high level trip initiation. A 2 out of 3 Probe channel voting circuit is applied with a 4th channel backup to counter internal supply failure. The normal Low Trip level may be selected for channel 2 or 3 and the Hi-Trip level for channel 12 or 13.

**CONTACT RATING:** 350 Volts 5 Amps. Max. Switching Power: AC-600VA - DC- 30W / 110V, 120W / 30V

**REMOTE DISPLAY:** Twenty terminals are provided for direct connection to one or two Remote Display units.

**4/20MA TRANSMISSION SIGNAL:** An integral 4 to 20mA circuit where each probe channel contributes a step change of 1.14mA. Selection of 4mA to represent the all water or all steam state. Max Load Impedance: 300 ohms

**SYSTEM FAULT ALARM:** A single pole changeover contact is available signalling supply failure or Probe channel malfunction by validation between adjacent channels.

**PROBE CABLE** - Special PTFE high temperature cable is supplied to connect the electronic unit to the probes. The standard length is 10m with a maximum 30 of meters. The cable consists of 22 cores terminated with ring crimps and ferules.

### REMOTE DISPLAY OPTIONS

Type 20251A. Panel mounted IP20

Dims: 180H x 72W x 30D (mm)

This unit duplicates the display on the front of the main unit as is intended for control room location.

Panel Cutout Dims: 174 x 67 (mm); 1.5 to 6.5mm thick

Type 20252 Plant mounted IP65.

Dims: 270H x 80W x 80W (mm)

This unit duplicates the display on the front of the main unit as is intended for plant mounting location.

### KEY FEATURES

*12 or 14 independent probe channels*

*System Fault feature for power supply failure or probe channel malfunction*

*Conductivity Settings for different water purity conditions*

*Dual Power Supply with 100% redundancy*

*Local Indication using Red & Green high visibility LEDS*

*Remote Display units for control room and plant use*

*Probe Validation for tripping logic*

*IP65 Rating of enclosure for external use*

*5 Relay outputs for alarms, trips and system fault*

### BACKGROUND INFORMATION

The Type 202 system is an "approved" electronic alternative to the gauge glass, providing a significant improvement in accuracy, visibility and safety, enabling transmission of the water level condition to a remote display and the application of alarm and control functions. It includes connections for 2 separate mains supply inputs to achieve the ultimate security and reliability for the indication and control functions. 12 or 14 probes are spaced vertically in a side arm water column attached to the boiler drum and with each probe connected to its own sensing circuit. The results are displayed on the local or remote displays. The probes are spaced in the water column to suit the site range.

### RELATED PRODUCTS

The 202 electronic unit is used in conjunction with the following:

- Water column
- Probes
- Probe Cable
- Remote Display