

WATER SUPPLIES DEPARTMENT
STANDARD SPECIFICATION E-81-05
INDICATING CONTROLLER

1. GENERAL

An indicating controller shall be designed with a proportional-integral-derivative (PID) feedback loop control component suitable for control of output device such as valve actuator. The controller shall be able to be automatically regulated on a preset signal as the setpoint for comparison with the measured output for controlling. The design of the controller shall avoid sudden variation of the output status such as valve actuator position in the control process. Switching of the controller from manual to auto shall be bumpless and shall not require manual balancing beforehand.

2. DESIGN

Unless stated otherwise in the Particular Specification, the indicating controllers shall meet the following requirements:

| | |
|-----------------------|--|
| Supply voltage | : 220V 50 Hz or 24V d.c. to suit the system requirement as specified |
| Analog input signal | : Two 4 - 20 mA d.c. |
| Analog output signal | : One 4 - 20 mA d.c. |
| Output contact | : One 2A 220V 50 Hz or 2A 24V d.c. as specified |
| Measurement error | : Less than $\pm 0.05\text{mA}$ |
| Temperature effects | : Less than $\pm 0.005\text{mA}/^\circ\text{C}$ |
| Operating temperature | : 0 - 50 $^\circ\text{C}$ |
| Operating humidity | : 5 - 95 % |

3. CONSTRUCTION

The indicating controller shall have two vertical columns of LED bargraph display as percent of the signal control range, one for indication of the set value and the other the measured value. These two values in engineering unit shall also be displayed in horizontal LED segment digital readouts. The controller output signal shall be indicated on a horizontal LED segment digital readouts.

The controller shall be provided with auto/manual output selection. All the adjustments of the setpoint and the control mode shall be by means of tactile-feel keys / push buttons provided on the panel front.

LED indicators or similar means shall be displayed for system operating status and alarms shall be provided for initiation of system abnormal status.