

# FLOW TOTALIZER / BATCH CONTROLLER

(FLAMEPROOF EXECUTION)  
MX-450 • MX-460

## OVERVIEW

The ASHE MX-450 and MX-460 are part of a range of Flow Rate Indicator Totalizers with Batch Control function, offered in a compact, rugged and reliable execution.

The instrument has two LED digital displays on the front panel – the Flow Rate Display and the Totalizer display. The RATE display indicates flow rate value on a four-digit (MX-450) or five-digit (MX-460) display, while the TOTALIZER display indicates the accumulated flow integrated over the selected time scale on an eight-digit display. The instrument has non-volatile memory.

The instrument accepts a standard analog input signal of 4 to 20 mA DC (two/four-wire) or a Pulse (Frequency) input of 0-10 kHz. An auxiliary power supply is generated internally for powering the external Flow Transducer or Mass Flow Meter.

At the same time, it integrates this signal with respect to the selected time scale and displays it on the Totalizer display. Two Relay outputs are offered – each of which may be independently configured for either flow rate or the batch totalized value, as desired – these set points may be set through the Membrane Switch-pad on the front panel. Two LED indications show the over-range status of the two control Relays.

The Flow Indicator Totalizer Model MX-450 and MX-460 operate on universal AC power supply. They are available in panel-mount and field-mount (weather-proof / explosion-proof executions).

All ASHE range of instruments carry a lifetime warranty for design and workmanship.

## FEATURES

- Microcontroller based design.
- Analog Current or Frequency (Pulse) input
- Fully configurable settings
- High accuracy and linearity to input signal
- Four or Five digit flow rate display
- Eight-digit totalized value display
- Seven-segment red LED displays
- Two Relay change-over contacts for Rate or Batch Control
- Very low power consumption and heat dissipation
- Retransmission option.
- Auxiliary Power supply for external Flow Transducer
- Universal AC Power Supply
- Rugged, industrial grade Aluminium Die-cast enclosure
- High Noise immunity.
- Panel / Field / Hazardous-area installation in IP65 execution
- Proven record of several thousand installations
- Lifetime warranty on design and workmanship



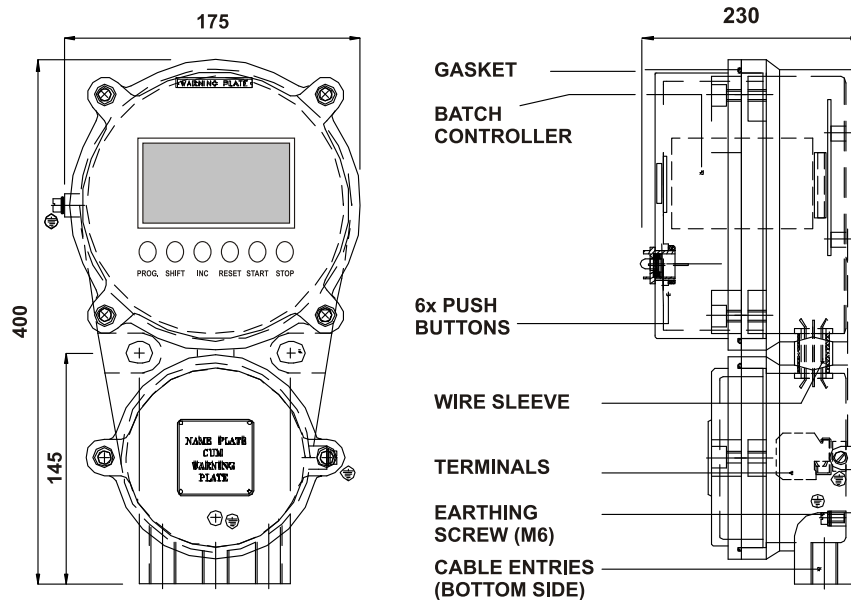
## SPECIFICATIONS

<b>Model</b>	ASHE MX-450-EX.
<b>Type</b>	Digital Flow Indicator Totalizer.
<b>Input Signal</b>	4 to 20 mA DC (Optionally frequency signal)
<b>System</b>	Two wire / Four wire [to be specified].
<b>Display</b>	Seven-segment ½" red LED display.
<b>Indications</b>	Four/Five-digit for Flow Rate display. Eight-digit for Totalizer display.
<b>Rate Scale Range</b>	0 to 9999/99999.
<b>Rate Calibration Range</b>	Configurable.
<b>Output Signal</b>	4 to 20 mA DC retransmitted [optional].
<b>Load Driving capacity</b>	Upto 600 Ohms.
<b>Totalizer range</b>	0 – 99999999 [eight-digit].
<b>Decimal point</b>	Selectable for both displays.
<b>Response time</b>	Typically 100 mS to within one count of the final value.
<b>Output</b>	Two control relay change-over contacts.
<b>Contact rating</b>	10 Ampere @ 230 V AC (Res. Loads).
<b>Accuracy</b>	0.1% FS.
<b>Resolution</b>	0.1%, 1 digit.
<b>Power Supply</b>	90 to 270 V AC, 50 Hz ( 5%).
<b>Auxiliary Power supply</b>	24 V DC to Transmitter (two-wire mode).
<b>Dimensions</b>	395 x 175 x 200mm [L x W x D].
<b>Enclosure</b>	Aluminium Alloy LM6 Die-cast enclosure suitable for Zone I, gas groups IIA/IIB certified by CIMFR Dhanbad
<b>Execution</b>	Hazardous-area installation in IP65 execution
<b>Weight</b>	Approximately 1.0 kgs.

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## DIMENSIONAL DIAGRAM



## HOW TO ORDER

1. FLOW TOTALIZER (BATCH CONTROLLER)  
(with Dual Relay Control for Flow Rate / Total)  
Input (pre-specified) : 4 to 20 mA / 0 to 10 KHz.  
Display : Dual display 8+4 digit LED  
Power Supply : 90 to 270 V AC, 50 Hz  
" Flameproof version : 8 digit totalized display

- |            |                                    |        |
|------------|------------------------------------|--------|
| a. Display | : Dual Display (8 digit + 4 digit) | MX-450 |
| b. Display | : Dual Display (8 digit + 5 digit) | MX-460 |

Configuration and Add-on options w

### 1 INPUT SIGNAL / SENSOR

- ▶ 4 to 20 mA DC
- ▶ 4 to 20 mA DC with aux 24 VDC @ 100 mA power for Trans.
- ▶ Frequency, Proximity Sensor.

L  
Q  
F

### 2 POWER SUPPLY

- Standard Power Supply offered
- ▶ Universal AC Power Supply, 90 to 270 V AC, 50/60 Hz.  
Optional Power Supply available on request
- ▶ 24 V DC (±10%).
- ▶ Other (to be specified).

V  
D  
Z

### 3 EXECUTION

- ▶ Panel mounting [96 x 96 x 110 mm]
- ▶ Field mounting in Weather-proof execution  
(Polycarbonate enclosure, IP65 protection)
- ▶ Field mounting in Flame/Explosion-proof execution  
(Cast Aluminum Alloy LM6 enclosure, for Gas groups IIA, IIB)

D  
W  
X

### 4 RETRANSMISSION

- ▶ Retransmission of 4 to 20 mA DC
- ▶ Retransmission of 0 to 10 V DC
- ▶ No Retransmission
- ▶ Other (to be specified)

R  
V  
O  
Z