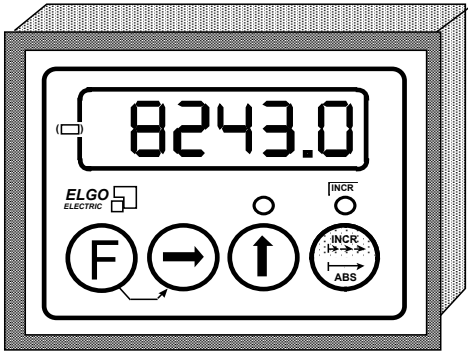
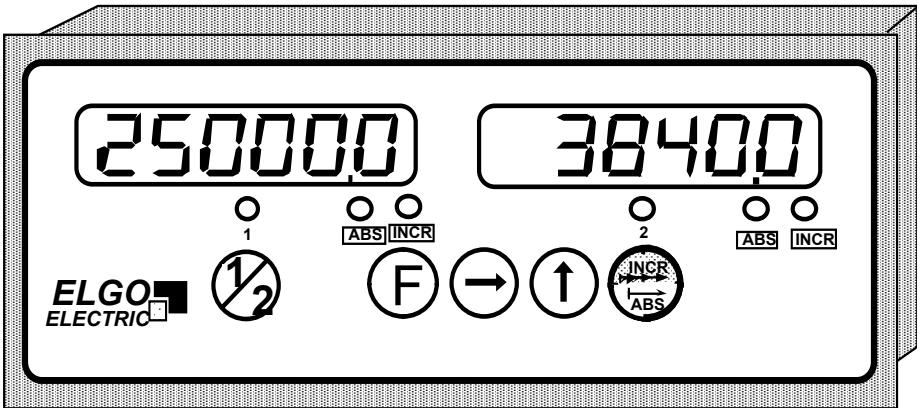


SERIES 54-76

Programmable Position Indicators



- Series 54 For use with Encoders
- Series 56 For use with MX magnetic scale
- Series 74 2 off Series 54 in one enclosure
- Series 75 1 off Series 54 an 1 off 56 in one enclosure
- Series 76 2 off Series 56 in one enclosure



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Essential Features

The Series 54,56, 74, 75 and 76 programmable position indicators are available with either a 5 digit 13mm high LCD display, a 5 digit 14mm red LED display, or 6 digit 10mm red LED display. The indicators incorporate the following features :

- Input of required datum value by means of the front buttons
- Robust foil covered buttons and compact plastic enclosure
- Can be operated from the batteries or from external power supply
- Memory on power down
- Designed to operate from encoder or magnetic scale feedback
- Setting of multiplication factor for display
- Incremental and absolute measurement
- Programming of features using front buttons
- Battery low indication
- 5 or 6 Digit display with +/- symbol, LED or LCD.
- Inch/metric selection.
- Display extinguished after 10 sec to save battery.
- Datum offset available.
- One or two axis formats are available
- External inputs on 54 series only.

The Range available is as follows :-

Series 54 single axis indicator available in LED or LCD display formats. Suitable for encoder feedback.

Series 56 single axis indicator available in LED or LCD display formats. Suitable for MX magnetic scale feedback.

Series 74 two axis indicator available in LED display format. Suitable for two encoders.

Series 76 two axis indicator available in LED display format. Suitable for two MX magnetic scale feedbacks.

Series 75 two axis indicator available in LED display format. Suitable for one MX magnetic scale and one encoder.

MX Magnetic Scale

The MX Scale is a non-contact magnetic linear measuring device used extensively with the ELGO simple positioning and display product range. The MX scale usually consists of three components :-

- MB20.50.xx,xm - Magnetic tape, available to lengths of 25m.
- MS17.60.03,0m - Sensing head incorporating feedback cable.
- MC18.50 - Signal translator which generates a rectangular feedback signal identical to an encoder.

In the case of the above indicators, the MC18 has been incorporated (where appropriate) into the indicators. The addition of this extra circuit board accounts for the additional cost of the MX scale option and the reason why, due to physical restrictions, the 56 series requires an external NG20 power supply.

Operation


These indicators may be fully controlled from four simple push buttons:-




Function select

-  Must be pressed with another button to select required function. Pressed on its own, returns from selected function to operation, and stores edited value to RAM.

Twin Datum

-  When pressed on its own, adds the Datum Offset to the actual position. Press again to subtract. Certain machines, such as panel saws with turnover stops, require two datums with a fixed offset that can be readily toggled.

Incremental / Absolute operation


-  When pressed on its own, switches between absolute and incremental operation.


In many applications dimensions are given on drawings, which are relative dimensions. Most position indicators display only the absolute position and it is necessary to calculate the new absolute position

e.g. $1928.7 + 325.9 = 2254.6$

This is laborious and can lead to errors.

This can be avoided by the use of this range of indicators. The operator can select

-  = "Incremental". This sets the display to zero. Operator can now move 325.9 and re-select

-  = "Absolute" (the display now reads 2254.6)

Setting Datum



When pressed together, immediately sets the preprogrammed datum position to the display.

This is only possible if the configuration register is set to (**XXXX0**)
(See user adjustments, for random setting of Datum).

Display Extinguish - 56 series (for battery life saving)

The counter and/or display may be extinguished in a number of ways.
The method required must be chosen in the config register.

User Adjustments

Edit Datum and Datum Offset

It is only possible for the operator to edit the Datum and Datum Offset, if the editing feature is unlocked in the configuration register. (**XXX0X**)

NB The Datum and Offset values incorporate any decimal places set in the configuration (See later)

Edit Datum programmed value

Press both buttons for three seconds, allows the editing of the datum value.
Range (00000 to + 99999)

Setting display to any value

Instead of having a fixed datum, the display can be set to any value desired and count from there. This is made possible by setting the Config register to XXX01.

Press both buttons for three seconds, any value may now be set in the normal way.

Edit datum Offset

- (F) (↑) Press both buttons for three seconds, allows the editing of the Datum Offset.
Range (00000 to + 99999)

Edit Datum +/- 1 bit

The indicator provides the facility for the operator to make small adjustments to the actual value of display to take care of minor machine variations. This is only possible when the configuration register is set to (**XXXX2**) NB: Setting of datum as above is not possible, when this feature is selected.

- (F) (→) Press both buttons for three seconds, any value may now be set in the normal way.
(→) subtracts one bit/press,
(↑) adds one bit/press, to the displayed value.

Edit Flexible Multiplier

It is only possible to edit the Flexible Multiplier if the editing feature is unlocked in the configuration register. (**XX0XX**)

- (F) (↔) for three seconds, allows the editing of the flexible multiplier
Range X 0.0001 to X 9.9999 (Decimal point is automatically displayed)
(F) Press the above button on completion of any edit, to store value to RAM and return to operating mode.

Changing Display Value

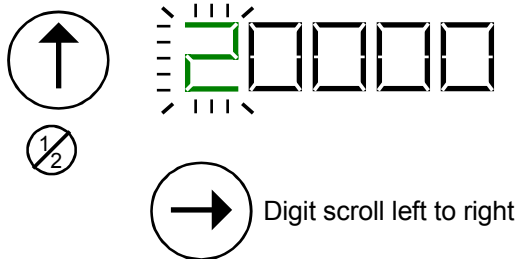
Display manipulation of both the **User Adjustment** and **Configuration** is done using the following method, once the desired function to edit has been accessed.

- to select the digit to be changed (this flashes)
- ↑ to increment the digit between 0 and 9.
- F stores the value to the internal RAM and returns the indicator to operating mode.

Setting of the Two axis indicators

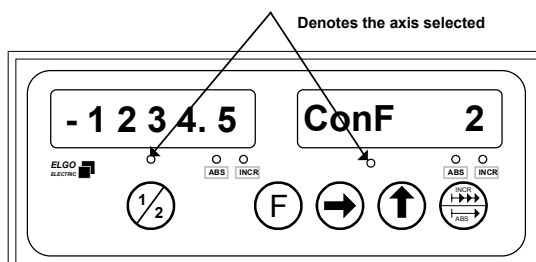
To operate and to set the two axis indicators it is simply the case of pressing this button
This toggles the setting functions from axis one to axis two. Once any setting routine is selected, it is not possible to toggle between axes. The single LED below each of the axis display signifies which axis is being edited.

Digit scroll
1 to 9



N.B.

Where present, the 6th LHS digit should be set to zero. This digit is only used for a +/- symbol.



Counter Configuration

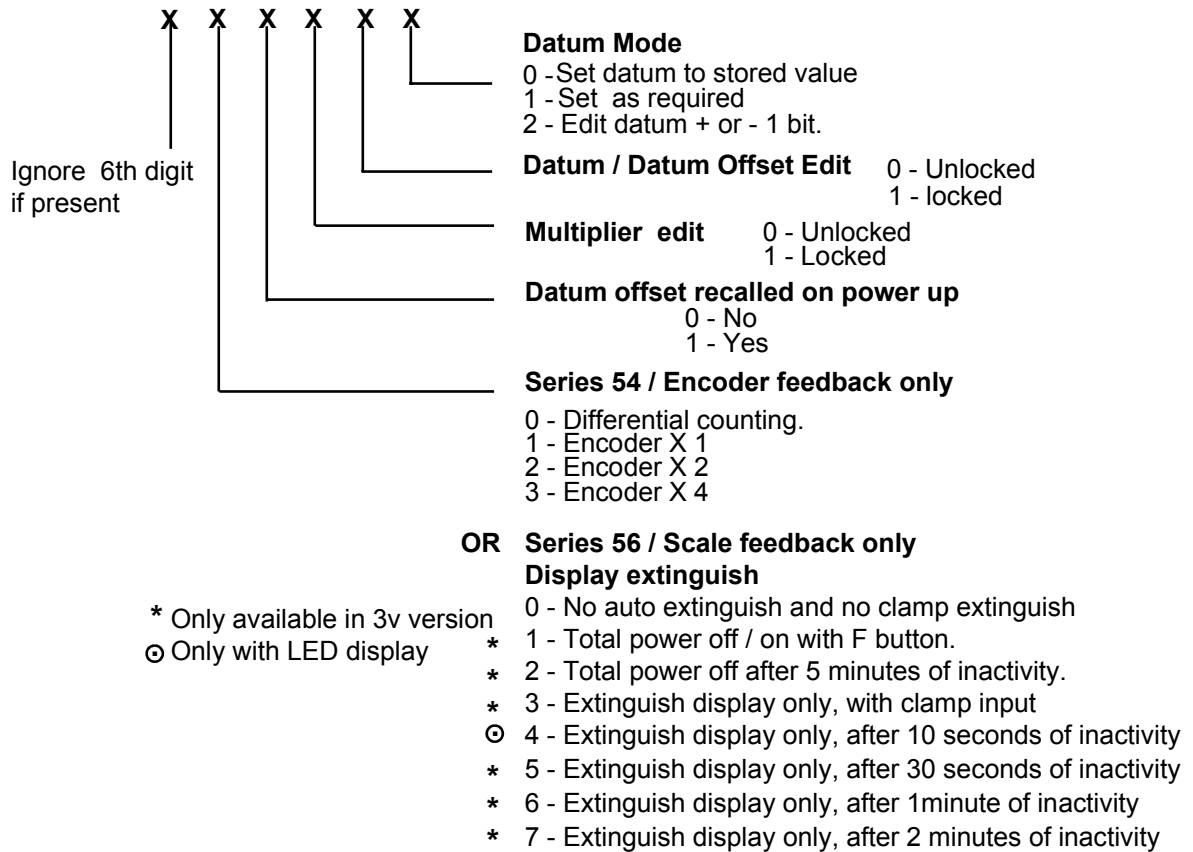


Press buttons for three seconds, the Configuration mode is entered.

Conf will be displayed. The configuration file determines the operation of the indicator.

Configuration Register

Press the **(F)** button for three seconds gives access to the configuration 5 digit register.



Direction of Count



Press for three seconds gives access to the count direction



to toggle between Up and Down.

Decimal Places



Press for three seconds gives access to the number of decimal places.



to toggle between 1,2 or 3 decimal places.

Inch / Metric Switching



Press for three seconds gives access to either counting in inches or millimetres.
(Inch or mm).



Press to toggle between these settings

On completion of editing of any section, Press **F** to store value to RAM and return to "Config".

Press all four buttons again for three seconds to return indicator to operating mode.

General Technical Information

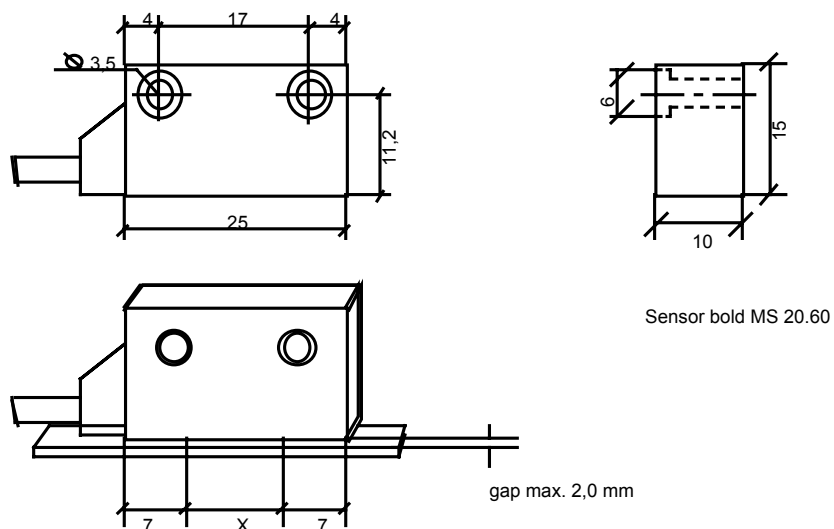
Indicators

Maximum counting frequency	- 10 kHz standard. - 50 kHz option (specify at order stage) - Series 56, 50 kHz standard.
Operating temperature	- 0 to 50 deg.C
Memory against supply failure	- 3 years
Current Consumption of Indicator excluding Encoder	- LCD : 100mA operating : 1mA standby
EE inputs	- LED : 40mA - PNP only. These provide external contact control of datum and zero reset. (Must be specified at order stage)

Encoders

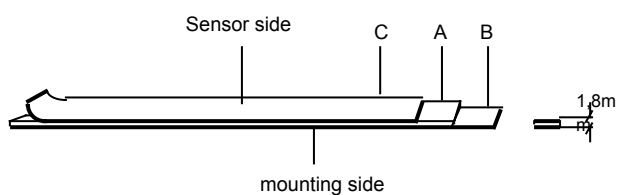
Encoder specification	- 24 volt PNP or push pull.
-----------------------	-----------------------------

Sensor - MS17.60.03,0m



Maximum speed of travel	- 5m/sec
Cable length	- 3m standard (up to 25m available)
Operating temperature	- (-5) to (+ 45) deg.C
Sealing	- IP66

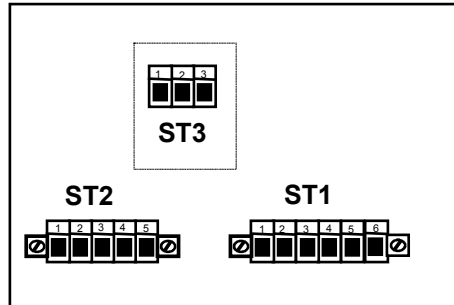
Magnetic Tape – MB20.50.xx,x



Resolution	- +/- 0.1mm
Operating temperature	- (-5) to (+ 45) deg.C
Scale expansion	- 0.000016mm / deg.C X m

Connections

Series 54 (EE Option)



ST1 - Inputs

Pin 1 - Screen
 Pin 2 - 0 volts
 Pin 3 - +24 volts } dc input for 024 versions
 Pin 4 - Offset
 Pin 5 - Datum
 Pin 6 - Reset to zero } Option EE
 Pull up to 24v to activate

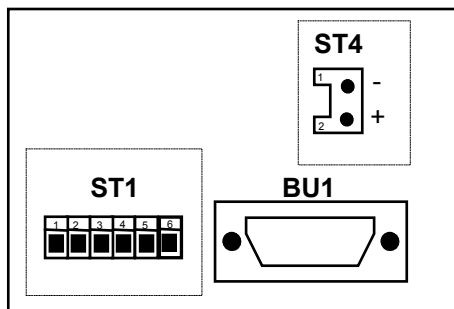
ST2 - Encoder

Pin 1 - 0 Volts
 Pin 2 - +24 Volts dc
 Pin 3 - Channel A
 Pin 4 - Channel B
 Pin 5 - Screen

ST3 - Power supply (Only for 110/ 230 Volt ac Versions)

Pin 1 - L
 Pin 2 - N
 Pin 3 - E

Series 56



Power Supply

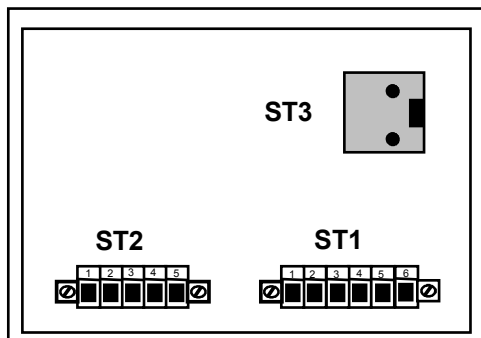
ST1 - 024 version. or ST4 - 003 version

Pin 1 - (-) } 24 volts dc
 Pin 2 - (+) }
 Pin 3 - E
 Pin 4 - Datum
 Pin 5 - Offset } Option EE
 Pin 6 - +24v output }
 Pin 1 - (-) } Battery
 Pin 2 - (+) }

BU1 - Scale feedback connector

See MX Scale manual.

Series 54 AG (EE Option)



ST3 - AC input

Pin 1 - L
 Pin 2 - N
 Pin 3 - E

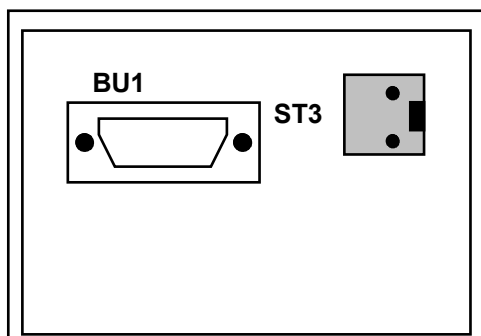
ST2 - Encoder

Pin 1 - 0 volts
 Pin 2 - +24 volts dc
 Pin 3 - Channel A
 Pin 4 - Channel B
 Pin 5 - Screen

ST1 - Inputs

Pin 1 - Screen
 Pin 2 - 0 volts
 Pin 3 - +24 volts output
 Pin 4 - Offset
 Pin 5 - Datum
 Pin 6 - Reset to zero } Option EE
 Pull up to 24v to activate

Series 56 AG



ST3 - AC input

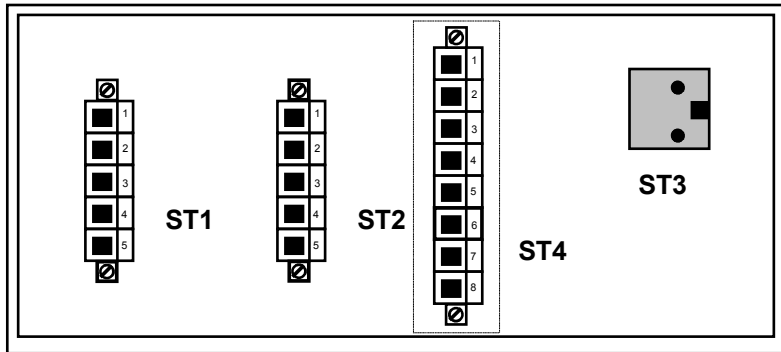
Pin 1 - L
 Pin 2 - N
 Pin 3 - E

BU1 - MX magnetic scale


See MX Scale manual

Series 74 AG

Dimensions



ST3 - AC input

Pin 1 - L
Pin 2 - N
Pin 3 - E 

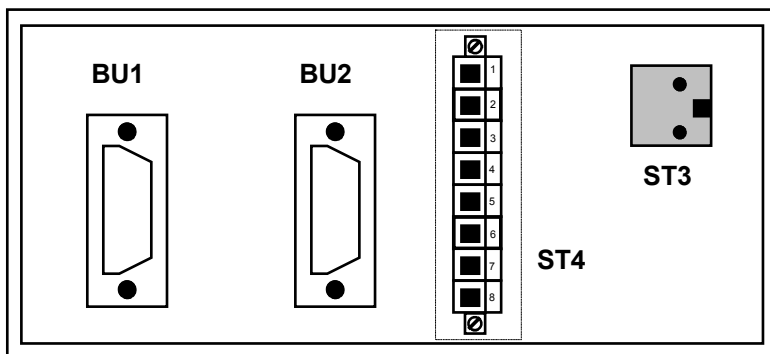
ST1 - Encoder

Pin 1 - 0 volts
Pin 2 - +24 volts dc
Pin 3 - Channel A
Pin 4 - Channel B
Pin 5 - Screen


ST2 - Encoder

Pin 1 - 0 volts
Pin 2 - +24 volts dc
Pin 3 - Channel A
Pin 4 - Channel B
Pin 5 - Screen

Series 76 AG



ST3 - AC input

Pin 1 - L
Pin 2 - N
Pin 3 - E 

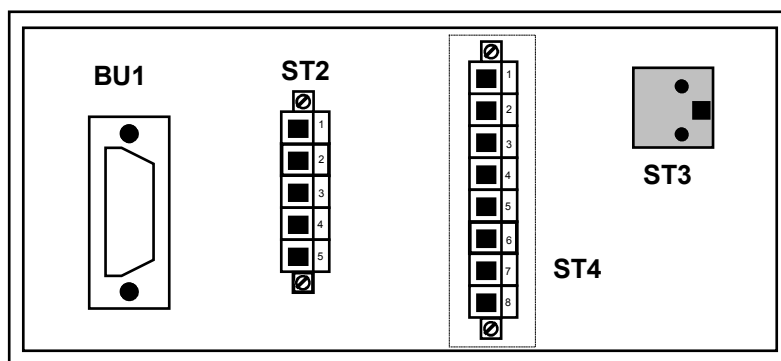
BU1 - MX magnetic scale

See MX Scale manual


BU2 - MX magnetic scale

See MX Scale manual

Series 75 AG



ST3 - AC input

Pin 1 - L
Pin 2 - N
Pin 3 - E 


See MX Scale manual

BU1 - MX magnetic scale

ST2 - Encoder

Pin 1 - 0 volts
Pin 2 - +24 volts dc
Pin 3 - Channel A
Pin 4 - Channel B
Pin 5 - Screen

ST4 - (all types) (Option)

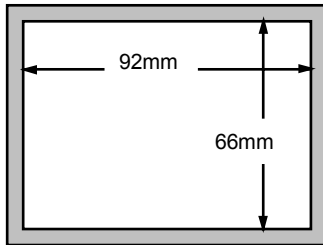
Pin 1 - E 	} Supply on low voltage
Pin 2 - 0 volts	
Pin 3 - +24 volts	} Option EE
Pin 4 - Datum Ax1	
Pin 5 - Zero Ax1	
Pin 6 - Datum Ax2	
Pin 7 - Zero Ax2	
Pin 8 - 24v out	

Earth (E) on power connector

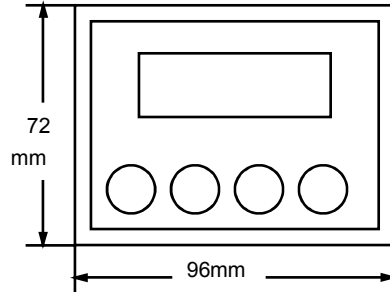
The E is connected to the metal housing and must be taken to earth.
Screen Terminals are internally connected to housing.

Panel Mounting Series 54 and 56

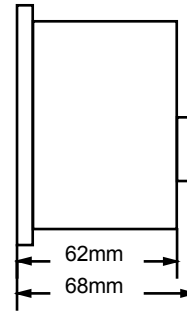
Cut Out dimensions



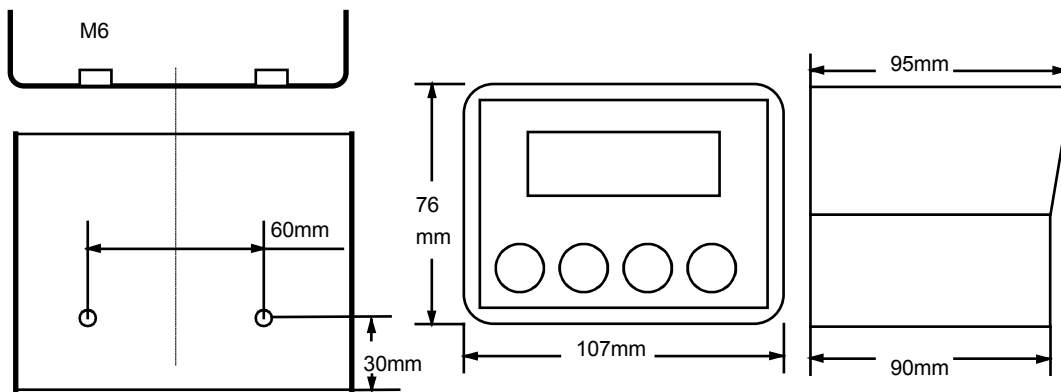
Outline Dimensions



Side View

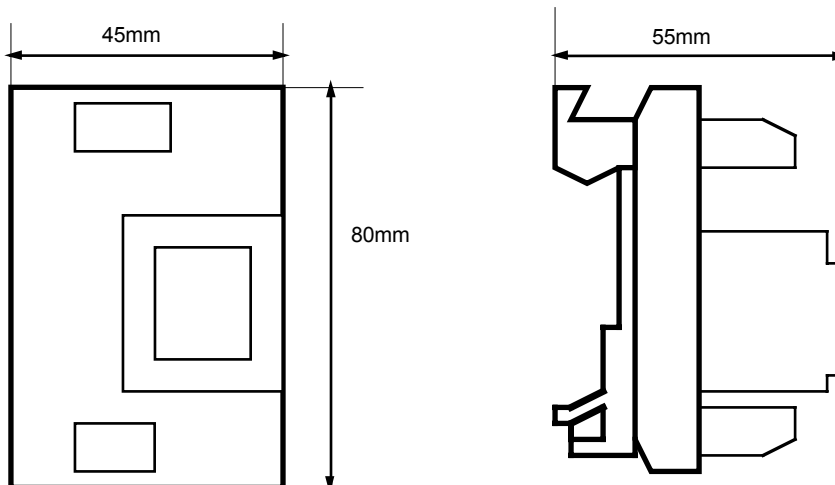


AG Enclosure Mounting Series 54 and 56



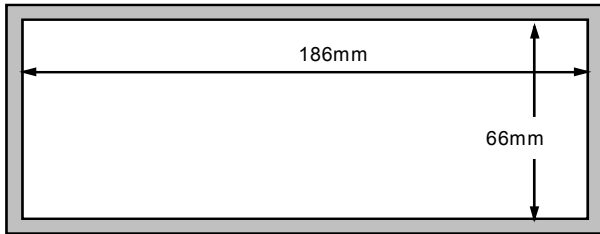
Depth 160mm with connector

NG20.0 Power Supply

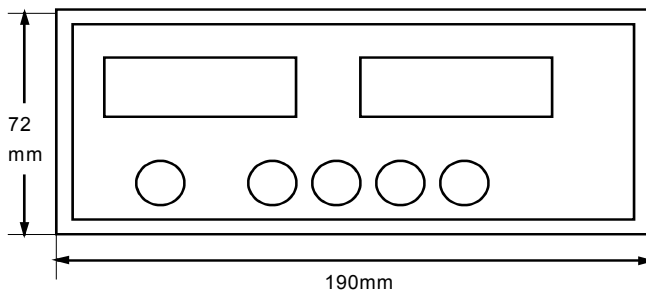


Panel Mounting Series 74, 75 and 76

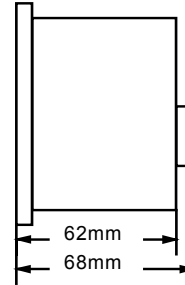
Cut Out dimensions



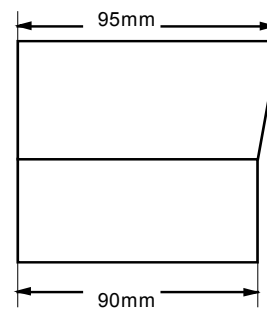
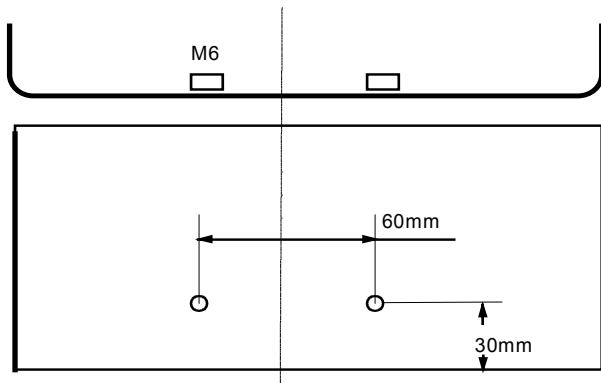
Outline Dimensions



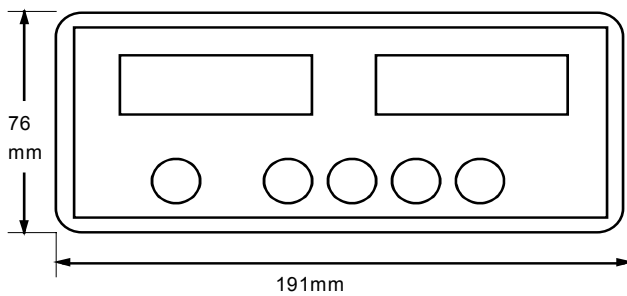
Side View



AG Enclosure Mounting Series 74, 75 and 76



Depth 160mm with connector



Series	Display			Power Supply				Options	
	600	500	100	003	024	110	230	AG	EE
54	■ ■	■ ■	■ ■		■ ■	■ ■	■ ■	■ ■	■ ■
56	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	○ ■ ○ ■	○ ■ ○ ■	■ ■	▲ ▲ ▲ ▲
74	■				■	■	■	■	▲
76	■				■	■	■	■	▲
75	■				■	■	■	■	▲

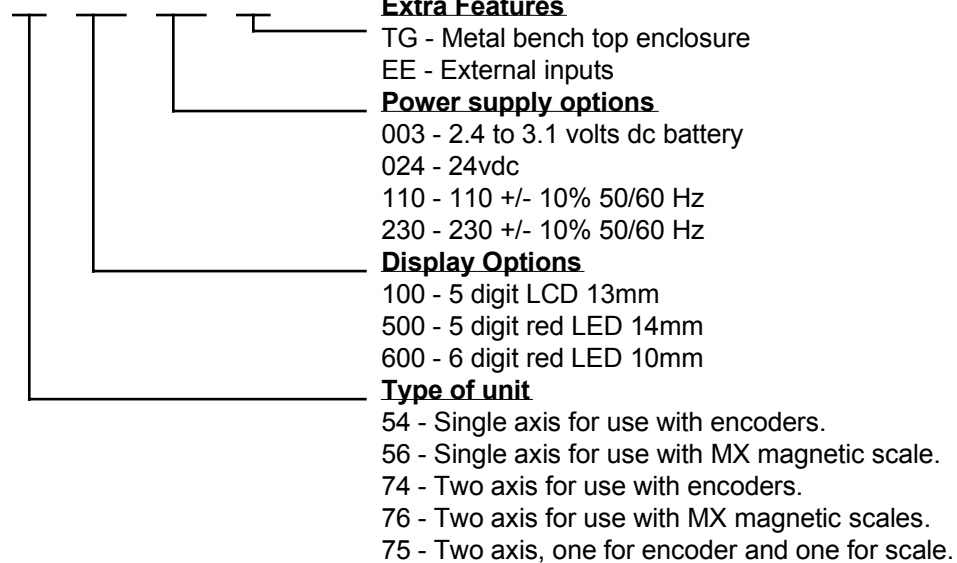
○ For 56 series indicators to operate on 110/230 v ac, use the 024 version and order a separate NG20.0 power supply.
AG versions always include NG20.0 mounted inside the enclosure.

▲ 2 external inputs only available.

For **AG** Version 230 or 110 v operation must be specified at order stage.

Order code description

XX . XXX . XXX .XX



Since all features are not available on all indicators, the following table should be used to make a selection.