

L160

Wall-/Pipe-Mount Level Indicator

L160 – the flexible level system
that meets your needs



High visibility 5-digit LED display

- clear multi-functional indication

Analog and 2-relay outputs as standard

- high, low, latch and rate alarms, plus isolated retransmission

IP66 (NEMA 4X) enclosure

- designed for use in wet environments

Maths function included as standard

- SG correction, tank volume calculation, plus a 20-point linearizer

Max./Min. and Average levels

- as standard the L160 can store these values

Wide range of sensor inputs

- built-in 24V DC power supply

RS485/Modbus serial communications

- SCADA, PLC and open system integration

L160

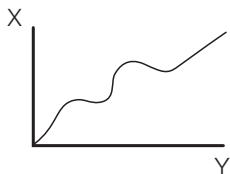
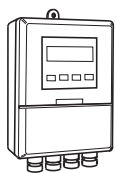
The L160 Universal Wall-/Post-mount Level Indicator is a highly versatile unit, accepting inputs from a wide range of level sensors offered by ABB and third party suppliers.

As standard the L160 has a 5-digit indicator with IP66 all-round protection. It includes two alarm relays, 4 to 20mA retransmission, logic output, logic input and selectable maths function which can make corrections for SG or calculate tank volume calculation.

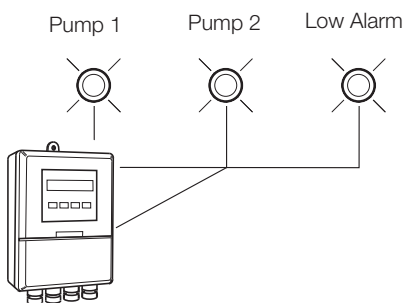
A 20-point linearizer is included for volumes in horizontal or dished-end tanks. There is also a feature to store the max./min./average values.

The RS485 Modbus serial communications option builds total system flexibility.

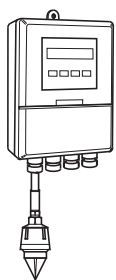


**Custom Linearization**

As standard the L160 has a 20-breakpoint linearizer suitable for volume calculation. (Factory setup using PC configurator).

**Multiple Alarm Control Option**

The L160 accommodates up to three relays to indicate a range of alarm states, i.e. pump control, with rate of change feature giving optimum pump utilization.

**Maximum/Minimum Level Detection**

As standard the L160 includes the ability to retain the highest and lowest level values. This is a particularly useful feature for unmanned sites, allowing a visiting operator to check quickly for abnormal levels.

Specification

Operation

Display

| | |
|--|-----------------|
| High-intensity, 7-segment, 1 x 5-digit LED display | |
| Three alarm LED indicators | |
| Display range | -9999 to +99999 |
| Display resolution | ±1 digit |
| Display height | 14mm (0.56 in.) |

Configuration

| |
|------------------------------|
| User-defined via front panel |
|------------------------------|

Standard Functions

Alarms

| | |
|--------|--|
| Number | Three user-defined |
| Types | High/Low process High/Low latch Fast/Slow rate |

Alarm hysteresis

| |
|--------------------|
| 0 to 100% of range |
|--------------------|

Math functions

| |
|--|
| Maximum and minimum value detection |
| Average level |
| SG correction |
| Tank volume calculation |
| 20-breakpoint custom linearizer (factory configured) |

Analog Inputs

Input type

| |
|---|
| 1 to 10 mA, 4 to 20 mA or customize via PC Configurator |
|---|

Input sampling rate

| |
|-------|
| 250ms |
|-------|

Accuracy

| | |
|-----------|-----------------|
| Indicator | 0.2% of reading |
| Output | <0.2% of span |

Sensor power supply

| | |
|---|--|
| 24V, 30mA max. powers one 2-wire transmitter ± 3V, 15mA (power for P851/P861 sensors)* | |
| *Option board | |

Outputs – Standard Build

Retransmission

| | |
|---|---|
| Analog, configurable in the range 4 to 20mA | |
| Max. load | 15V (750Ω at 20mA) |
| Isolation | 500V DC from sensor input (not isolated from logic output) |

Logic output

| | |
|----------------|---|
| 18V DC at 20mA | |
| Min. load | 400Ω |
| Isolation | 500V from sensor input (not isolated from retransmission output) |

Relay output

| | |
|---|--|
| Two relays as standard (SPDT) 5A at 115/230V AC, 5A at 24V DC | |
| Assignable to alarms | |

Options

One build can be selected from:

| | |
|---------|--|
| Type 01 | Two relays + retransmission + logic output + digital input (Standard Build) |
| Type 02 | Three relays + retransmission + logic output + digital input |
| Type 03 | Two relays + retransmission + logic output + digital input + Modbus |
| Type 04 | Two relays + logic output + retransmission + P851/P861 power supply |

I/O

Relay output

| | |
|------------------------|--|
| SPDT 5A at 115/230V AC | |
| Assignable to alarms | |

Digital input

| | |
|---------------|-----------|
| Type | Volt-free |
| Minimum pulse | 250ms |

Modbus serial communications

| | |
|-------------|---------------------------|
| Connections | RS422/RS485, 2- or 4-wire |
| Speed | 2.4k or 9.6k baud rate |
| Protocol | Modbus RTU slave |



Electrical**Voltage (supply)**

85 to 265V AC 50/60Hz

24V DC optional

Power consumption

<6VA (85 to 265V AC)

<5W (24V DC)

Power interruption protection

<60ms/<3 cycles, no effect

>60ms/>3 cycles, instrument returns to operation after a controlled reset

Physical**Size**160mm wide x 250mm high x 68mm
(6.3 in. wide x 9.84in. high x 2.68 in.)**Weight**

2kg (4.5 lb)

Environmental**Operating limits**

-10 to 55°C (14 to 131°F)

5 to 95% RH non-condensing

Temperature stability

< 0.02% of reading or 2µV/°C (1µV/°F)

Enclosure

IP66 (NEMA 4X)

EMC**Emissions**

Meets requirements of EN50081-2

Immunity

Meets requirements of EN50082-2

Design and manufacturing standards

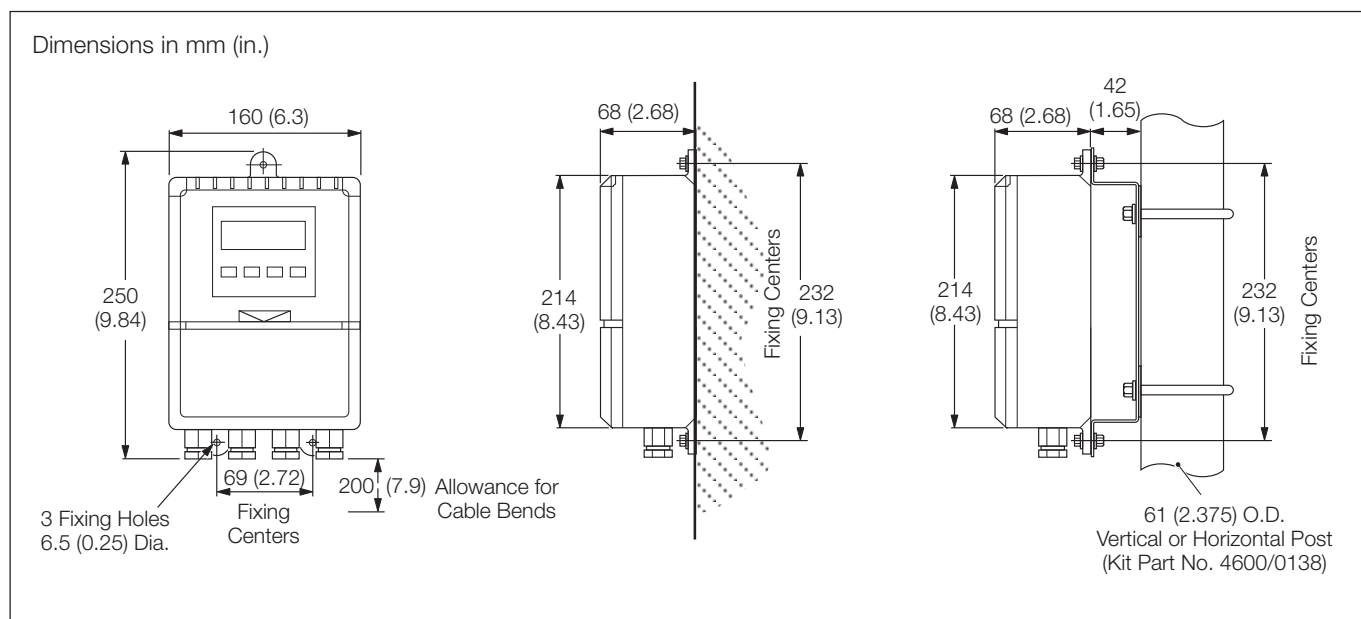
CE mark

Electrical safety

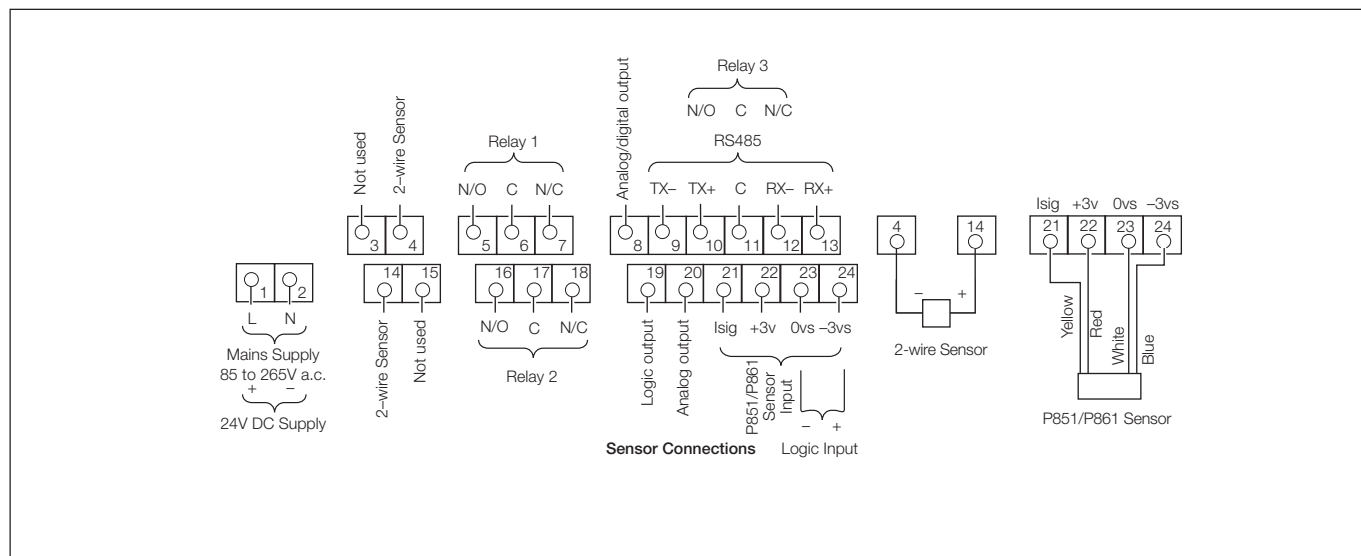
EN61010-1



Overall Dimensions



Electrical Connections



Ordering Information

| L160 Wall-/Pipe- Mount Level Indicator* | | L160 / | X | X | X | X | / | X | X | X | X |
|---|--|--------|---|---|---|---|---|---|---|---|-----|
| Options | | | | | | | | | | | |
| 2 relays + retransmission + logic output | | | 0 | 1 | | | | | | | |
| 3 relays + retransmission + logic output + digital input | | | 0 | 2 | | | | | | | |
| 2 relays + retransmission + logic output + digital input + Modbus | | | 0 | 3 | | | | | | | |
| 2 relays + retransmission + logic output + P851/P861 power supply | | | 0 | 4 | | | | | | | |
| Power supply | | | | | | | | | | | |
| 85V to 265V AC (M20) | | | | | | 0 | | | | | |
| 24V DC | | | | | | 1 | | | | | |
| Build | | | | | | | | | | | |
| ABB Standard | | | | | | | 0 | | | | |
| Programming/Special Features | | | | | | | | | | | |
| Configured to factory standard | | | | | | | | | S | T | D |
| Configured to customer requirements | | | | | | | | | C | U | S |
| Special features | | | | | | | | | S | P | X X |

* For pipe-mounting, order kit no. 4600/0138

Accessories

PC Configuration Kit (part no. C100/0700)

