I 410 Graphic Terminal
I 410 D / D-S / D-T

PRECIA MOLEN™
WORLDWIDE WEIGHING

Options

Internal measurement board

Analog measurement board

▼ Input division .... 0.5 µV

▼ Number of divisions 200 000
(Non Trade Use)

▼ Load cell junction:
- Nominal power supply........................... 5 V DC
- Junction ....4/6 wire shield
- Minimum impedance.............................. 58 Ω
- Maximum impedance.......................... 1 245 Ω
- Maximum cable length......................... 150 m
  (0.68 mm²)
- Connection .... Spring terminals
- Dead load minimum signal...................... 0 mV
- Useful maximum signal .... 12 mV

▼ Nº of measurements available per second .... 7 to 120

▼ Adjustable filtering modes and parameters

This option enables connecting 4 to 6* load cells via an external junction box.

Digital measurement board (PMNet)

	TU	NTU
▼ Accuracy class (TU only)	III	-
▼ Maximum number of divisions:		
• mono-range	10 000	30 000
• double-range	2 x 10 000	-
▼ Power tension	24 V DC	
▼ Load impedance		
▼ Number of physical measurement channels	1 to 3 depending on configuration	
▼ Number of channels	7 (channels resulting from the combination of 3 physical channels)	
▼ Maximum nº of load cells per channel	12	
▼ Max permissible error distribution factor	0	

Summation board

Allows the summation of 2, 3 or 4 analog or digital measurement channels.

The summed channels can correspond to internal measurement boards or internal transmitters.

Possibility to have 2 measurement boards and one summation board in every terminal (analog/digital combination possible).

Power supply

▼ I 410 D-S: 24 V - 1.1 A internal power

▼ I 410 D-T: 24 V - 1.1 A or 2.3 A tabletop external power

▼ I 410 D: DIN rail 24 V - 2 A external power

100-240 V - 50/60 Hz primary for all models.
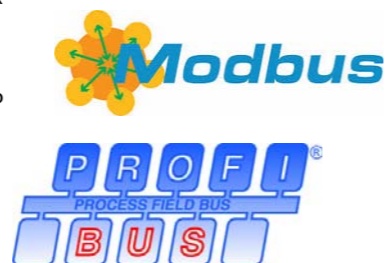
* Or 8 high impedance load cells.

Communication

Serial link

▼ RS 232 serial link

▼ RS 422/485 serial link

Field bus

▼ Ethernet Modbus-TCP

▼ PROFIBUS-DP

Modbus

PROFIBUS PROCESS FIELD BUS

Inputs/Outputs

▼ 2 digital inputs/4 digital outputs
- Inputs:
  Input tension .... 8-30 V DC
- Outputs:
  Max. power / contact .... 100 mA
  Max. tension. .... 48 V DC
  Ron .... 15 Ω

▼ 1 analog input/2 analog outputs 4-20 mA or 0-10 V
(isolation 500 V / system)
- Input and outputs:
  Input impedance.. 440 Ω
  Load resistance** .... 500 Ω
  Accuracy .... 0.1 %
  Resolution .... 16 bits

DSD

Weigh data storage device for 38 000 or 128 000 records.

Speed sensor board (continuous weighing)

▼ 1 speed sensor input to be used with any type of 24 V D supplied detector (selection by jumper):
- NPN/PNP commutation threshold .... 10 - 14 V
- 2-wire type - Load resistance........................ 2.2 kΩ

▼ 1 input (selection by jumper)
- Logical input:
  Input impedance...................................... 17.2 kΩ
  Input tension .... 24 V DC
- 2-wire detector input - Impedance .... 1.5 kΩ
- 4-20 mA input - Impedance .... 150 Ω

▼ 1 isolated logical output:
- Max. power .... 125 mA
- Max. tension .... 48 V DC
- Ron .... 25 Ω

** sur sorties

I 410 D

I 410 D-S

I 410 D-T

Presentation

The I 410 Graphic Terminal is part of the PRECIA MOLEN I 410 range. It is the central man/machine interface item.

It encloses a wide software library to meet most needs related to dosing, tolerance check, check weighing, continuous totalling, etc...

Moreover, with its PLC-oriented software workshop, a specific application can be developed to perfectly adapt to:

▼ existing equipment (PLC, field bus, protocol, ...),

▼ specific functionalities (production chain peripheral commands, data acquisition and processing, ...),

▼ IT interconnections (outsourced information feedback and processing).

Depending on the application, the terminal can be connected to various external weight transmitters or be equipped with internal measurement boards that turn the terminal into a multi-channel weight indicator.

European compliance

▼ 2004/108/EC Directive relative to *Electromagnetic Compatibility*.

▼ 2006/95/EC Directive relative to *Low Tension* equipments.

Available models

The I 410 graphic terminal range is made up of the various models below.

▼ I 410 D: panel-mounted terminal in cabinet or console.

▼ I 410 D-S: terminal in waterproof stainless steel casing adapted to a use nearest the work station as possible in harsh environments.

▼ I 410 D-T: terminal for tabletop use.

All these terminals are available in digital or alphanumeric keyboard versions.

Trade Use certification

▼ Certification according to the 2009/23/CE Directive relative to Non Automatic Weighing Instruments: 6 000 divisions (single or double-range) and 3 000 divisions (multi-division).

▼ Certification according to the MID 2004/22/CE Directive relative to Automatic Weighing Instruments:
- Checkweighers: XIII(1) et Y(a) classes
- Continuous totalisers (dynamic weighing): 0.5 and 1 classes
- Discontinuous totalisers (with non constant weigh): 0.25, 0.5, 1 and 2 classes.
- Automatic gravimetric filling: functional accuracy class X(x) x = 0.2 - 0.5 - 1 or 2 depending on on-site test results.

Design

Keyboard types

3 types of touch keyboard:
- Digital standard
- Alphanumeric AZERTY
- Alphanumeric QWERTY

Graphic screen

The I 410 terminal offers a backlit 240 x 128 multi-function graphic screen that ensures a user-friendly interface for the user.

Accessibility at any moment of the metrological screen for all the weighing instruments that make up the various transmitters that are connected to each.

A multilingual display is possible with various fonts.

Electrical features

▼ Regulated power supply
- Power tension .... 12 - 30 V DC
- Consumption .... 5 W*
- Connection .... Spring terminals

Environment

▼ Temperature range
- In operation .... - 10 ºC / + 40 ºC
- Storage .... - 20 ºC / + 60 ºC

External keyboard / bar code reader

Possibility to connect a PC-type keyboard or a bar code reader (on 8pt DIN female plug).

USB memory kit

- Saving / restoring metrological parameters.
- Terminal software upgrades (system, application, messages, languages).
- Saving / restoring application files and results.

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1. Access to metrological data display.
2. Access to work level selection (User, Operator, Supervisor, Engineer) managed by password as well as the screen light and contrast adjustment.
3. 10 multi-function keys, F1 to F10, defined in the application and captioned by the display.
4. Access to a selection of special characters (entry mode).
5. 4 multi-function keys, SF1 to SF4, defined in the application and captioned by the display.
6. Validation key.

Excl. Inputs/Outputs options.

Physical features**

Panel-mounted model

- Front panel waterproofness: IP 65
- Weight: approx. 3 kg

Cut-out dimensions

Max. thickness: 6 mm
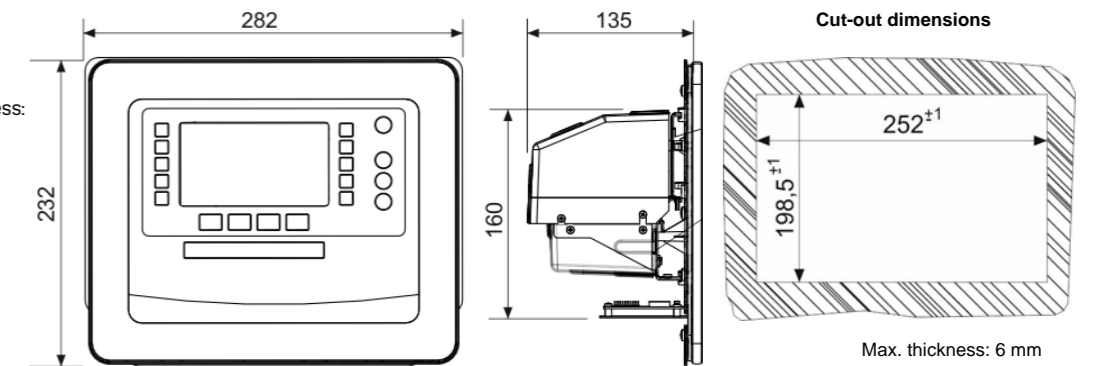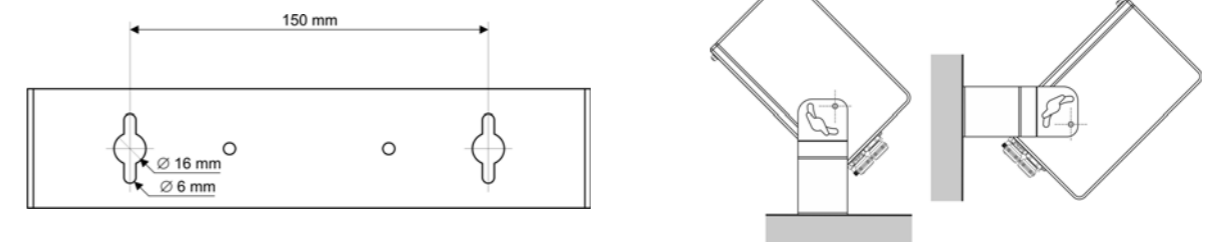
Casing model

Dimensions

- Waterproofness: IP 66
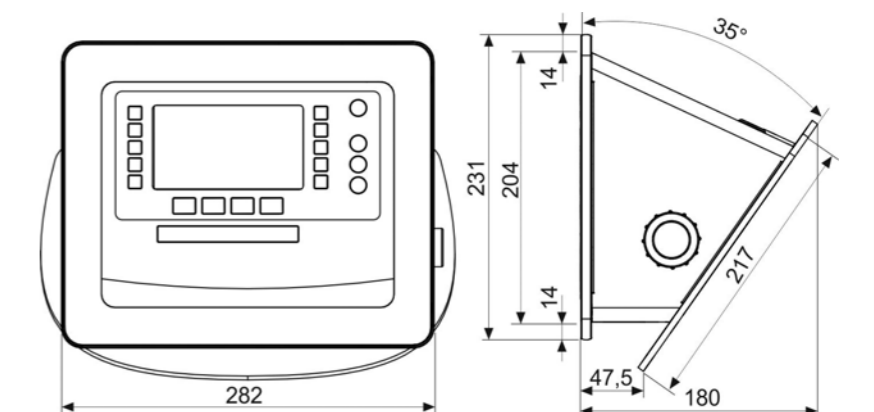- Weight: approx. 4.3 kg
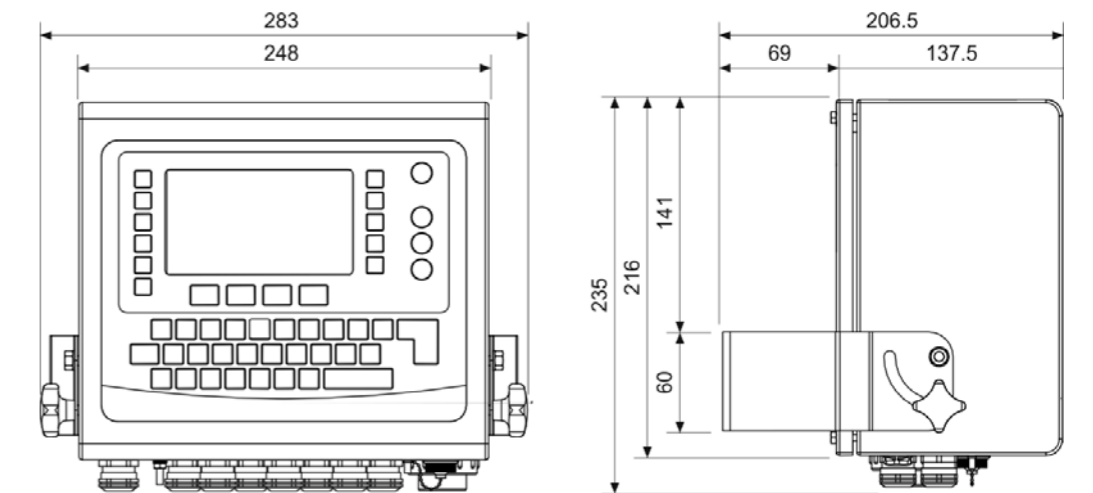
Support assembly

Tabletop model

- Front panel waterproofness: IP 65
- General waterproofness: IP 34
- Weight: approx. 3 kg

Dimensions in mm.