

Digital weighing terminal D 440 IS

for innovative weighing system solutions in potentially explosive atmospheres



Commercially verifiable in accordance with accuracy classes III, CE and EMC tested, comprising 2 modules:

Weight display D 440 IS with Ex i protection

Certificate: CESI 05 ATEX 022 / classifications for gas and dust:

Ex CESI 05 ATEX 022 II 1GD EEx ia IIC T5 IP65 T=100°C (-20°C ≤ T amb ≤ +55 °C)

Contains the electronic components and the interface to the scale

Supply unit PS 440

Intrinsically safe terminal box with inputs/outputs

Ex m proof (encapsulation)

Certificate: CESI 05 ATEX 023 / classification:

Ex CESI 05 ATEX 023 II 2 (1)GD EEx e m [ia] IIC T5 IP66 T=100°C (-20°C ≤ T amb ≤ +40°C)

Ex CESI 05 ATEX 023 II 2 (1)GD EEx e m [ia] IIC T4 IP66 T=135°C (-20°C ≤ T amb ≤ +55°C)

The weight display D 440 IS and the supply unit PS 440 can be used in the approved zones (see table):

Manufacturer's responsibility	Customer's responsibility				Definition (94/9/EC) potentially explosive atmosphere is present:	Permissible area for:
Category	Can be use in zone (gas)	Can also be used in zone (gas)	Can be used in zone (dust)	Can also be used in zone (dust)		
1G / 1D	0 (0)	1 and 2	20 (10)	21 and 22	Continuously or for long periods or frequently	D 440 IS
2G / 2D	1 (1)	2	21 (11) Zone 22 "conductive dust"	22	Occasionally	D 440 IS PS 440

G = Gas / D = Dust

() = Old designation in brackets

Both modules have appropriate, specific approvals for use in potentially explosive atmospheres and must be combined.

The maximum distance between the weighing terminal D 440 IS and the supply unit PS 440 is 10 m (net cable length).

General features, basic configuration

Housing:

PS440 Impact-resistant ABS plastic, ingress protection IP 66

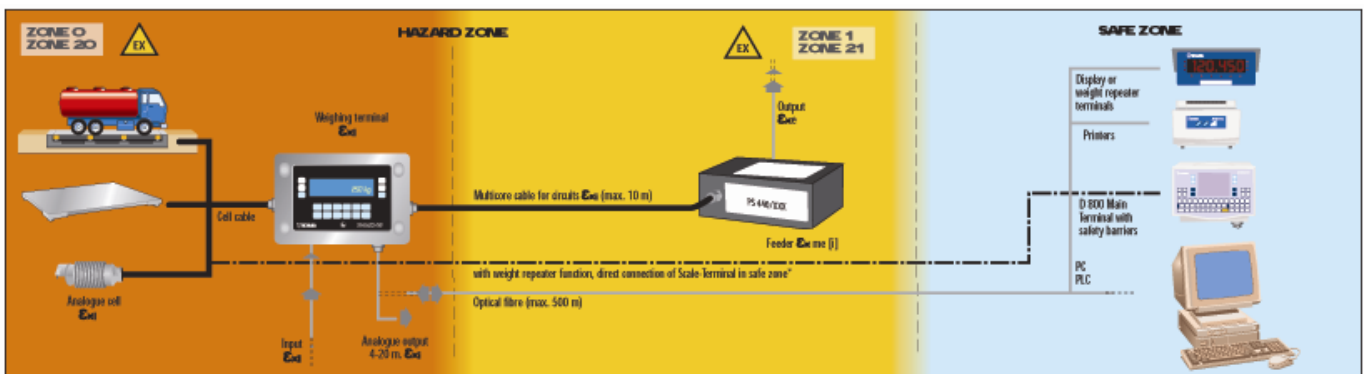
D440 IS Stainless steel AISI 304, ingress protection IP 65



For connection to a scale with analogue load cells

(Max. 4 load cells at 350 Ohm or max. 8 load cells at 700 Ohm with 6-wire system, e.g. CPR load cells)

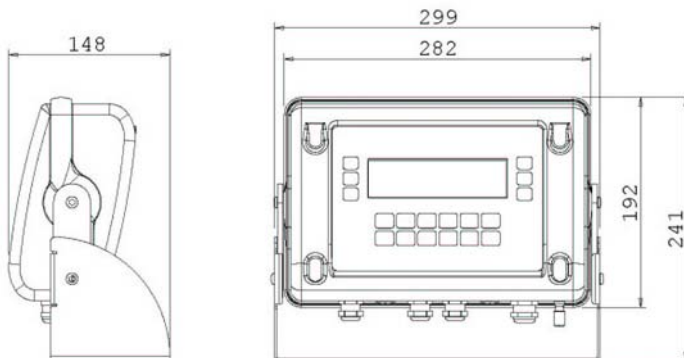
6 user interface languages: German, English, French, Italian, Spanish, Portuguese



Installation variants

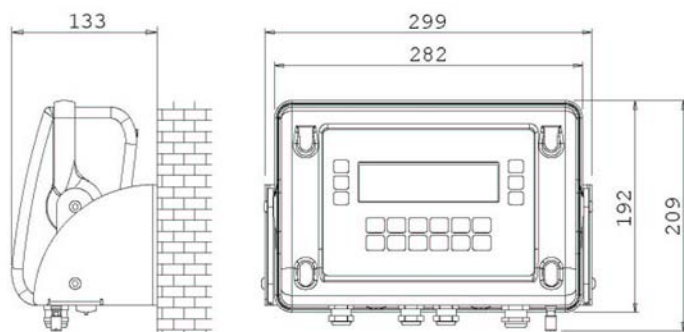
Standard bench installation

Dimensions weight display D 440 IS
 Weight: 4 kg



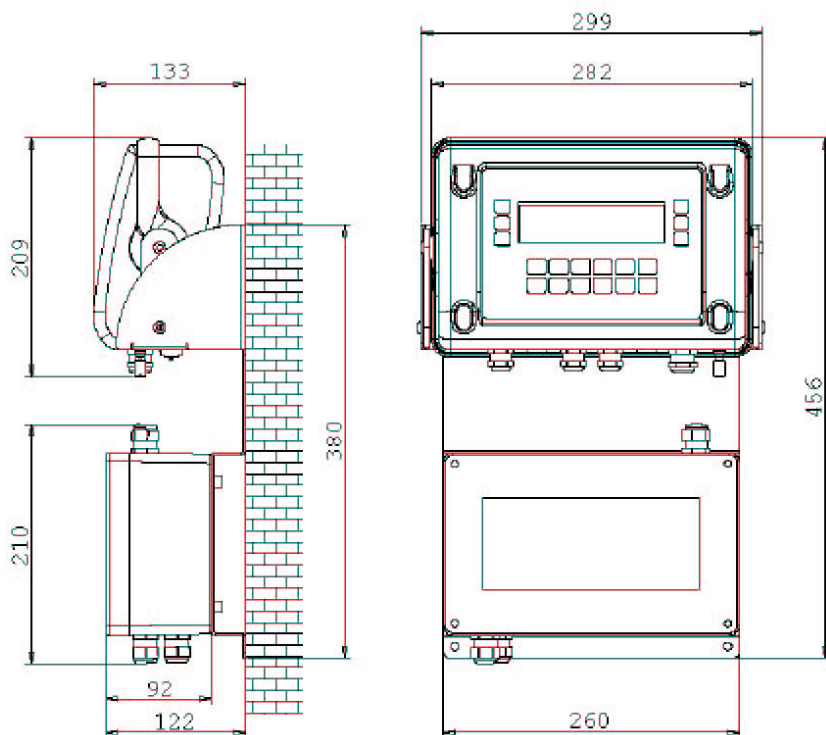
Optional wall mounting

Dimensions weight display D 440 IS
 Weight: 4 kg



Dimensions weight display D 440 IS and supply unit PS 440 - weight: 9 kg

With optional bracket for compact wall mounting



Other optional installation variants: with floor pillar

Data management / functions D 440 IS:

- Gross / auto tare or specified tare / net
- Tare memory (multiple tare values and their management)
- Zeroing
- Test (weighing terminal self-test)
- Total weighing
- First weighing and second weighing
- Transfer of the weights and additional data to the printer in the safe zone
- Print output configurable (flexible layout design)
- Personalisation of the most frequently used functions for direct access via the alphanumeric keypad
- Simple dosing / filling function (only 1 component)
- Permanent clock/calendar function
- Can be used as remote display
- Master data management: material / vehicle registration number (or general code); for double weighing also customers
- Management of the goods codes with alphanumeric description (max. 20 characters)
- Management of a general alphanumeric code
- Management of the "multi tare" function
- "Manual selection" function with management of up to 15 weight ranges
- "Weight check" function with management of the limits assigned to the product code up to a maximum of 500 codes
- Total memory function by code or selected function
- 8 Hz analogue filter; automatically adjustable digital filter
- Load cell connection for 6-wire system

Technical features D 440 IS:

Alphanumeric membrane keypad	18 keys (quadruple assignment), with clearly defined pressure point, of which 6 are function keys (soft keys)
Display	Background illuminated LCD, 135 x 32 mm
Weight display	Character height can be selected as 16 or 32 mm
Power supply	230 V AC, 50 / 60 Hz (optional 115 V AC and 24 V AC versions available)
Operating temperature	-10°C to +40°C (for verifiable application) -20°C to +55°C (potentially explosive atmosphere)
Storage temperature	-20°C to +70°C
Relative humidity	Max. 85 % at 40°C
Ingress protection	IP 65
Resolution	Up to 4,000 d verifiable Up to 10,000 d not verifiable
Max. input voltage	23mV (load cells)

Display D 440 IS

Legend:

- 1) Function keys (soft keys)
- 2) Display (weight and additional messages)
- 3) Alphanumeric keypad



Data interface D 440 IS

- 4 inputs exi, opto de-coupled; Vmax 6V, Imax 63mA, Pmax 94 mW
- 4 outputs electromechanical contacts to the PS 440 Vmax 110 V AC, Imax 200 MA
- 2 bidirectional serial optical fibre channels

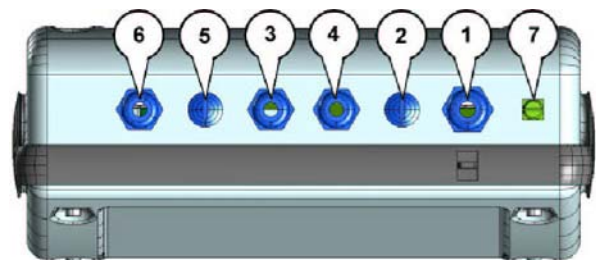
Possible additional features D 440 IS (options)

- Verifiable hardware data store MPP, replaces alibi printer (continuous storage of the weight values as per the applicable verification regulations). Storage capacity: 130,000 weighings (weight value + tare). Once full, the oldest data are overwritten by the new data.
- 1 analogue output for voltage and current (inherently safe 4-20 mA)
- 2 serial optical fibre interfaces (instead of analogue output) with following characteristics:
 2 bidirectional channels, one of which is suitable for optical ring connection for PC-controlled terminal network
 PC interface in safe zone
 Transmission speed 9600 to 115000 baud
 Maximum distance with optical fibre cable: 500 m
- Connection with optical fibre cable to the printer in the safe zone

Layout weight display D 440 IS

Legend:

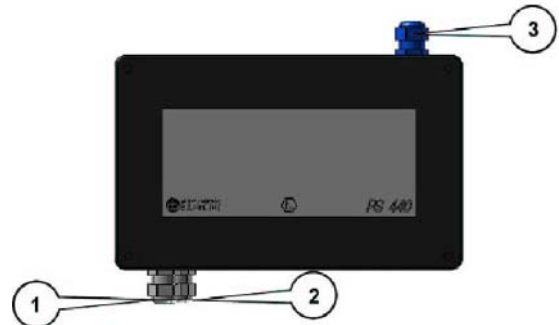
- 1) Cable gland PG 11
 (suitable for cable with outside diameter from 5 to 10 mm)
- 2) and 5) Sealed opening, do not use
- 3), 4) and 6) Cable gland PG 9 (suitable for cables with outside diameter from 4 to 8 mm)
- 7) Screw for equipotential bonding up to 6 mm² Cu wire



Layout supply unit PS 440

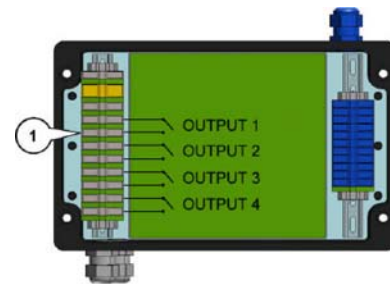
Legend:

- 1) Cable gland M16 x 1.5 black
 (suitable for cables with outside diameter from 5 to 10 mm)
 Mains supply entry
- 2) Cable gland M16* 1.5 black
 (suitable for cables with outside diameter from 5 to 10 mm)
 Output cable entry
- 3) Cable gland M16* 1.5 blue (suitable for
 cables with outside diameter from 5 to 10 mm)



Legend – Output connection:

- 1) Terminal strip PS 440



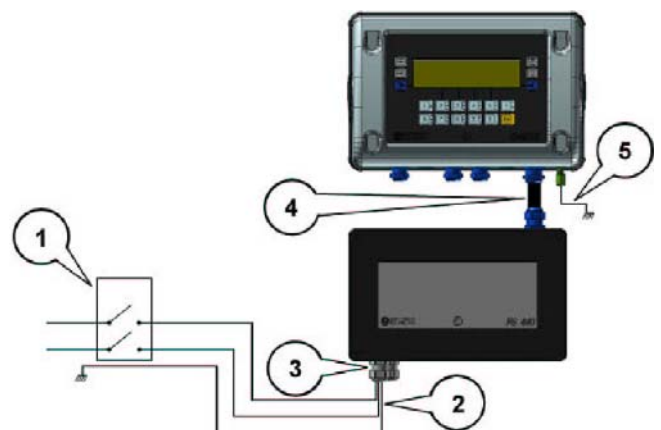
Technical features PS 440:

Power supply	230 V AC, 50/60 Hz, 40 W (standard) optional 115 V AC, 50/60 Hz and 24 V AC, 50/60 Hz versions available (on the Exe terminals)
Output contacts	$V_{max} = 125 \text{ V AC/DC}$ $I_{max} = 200 \text{ mA}$ (on the Exe terminals)
Operating temperature	-10°C to +55°C (in potentially explosive atmosphere) -10°C to +40°C (for verifiable application)
Storage temperature	-20°C to +70°C
Relative humidity	max. 85 % at 40°C
Ingress protection	IP 65
EMC	Protected against electromagnetic fields up to 10V/m

Connection of the terminal to the mains

Legend:

- 1) Two-pole isolating switch
 (provided by the customer on site)
- 2) Supply cable L-N-PE
 (provided by the customer on site)
- 3) Supply cable entry PS 440
- 4) Supply cable D 440 IS
- 5) Equipotential bonding 6 mm²
 (provided by the customer on site)



- Subject to technical change -