# INTECONT® Tersus
## Mass flow rate measurement

- **Maximum reliability**
- **Legal-for-trade ability accuracy**
- **Automated commissioning and adjustment**
- **Cost-effective compact system**

### Application

The control electronics INTECONT® Tersus are specifically used for technical weighing tasks in continuous process sequences.

It is conceived for recording highly accurate bulk solids flows.

Application
- MULTIBELT® belt weighers (also able for legal-for-trade)
- MULTISTREAM® solids flow meters
- MULTICOR® coriolis mass flow meters

Custom models are for applications in explosion hazard areas.

The control electronics is primarily for cases where the operator needs convenient and comprehensive display, control and monitoring functions in the electronics themselves - in addition to the basic technical measuring functions.

Proven industrial quality guarantees a long lifetime and high levels of accuracy.

### Equipment

The electronics are supplied as a front-of-panel unit or with a wall-mounted housing for installaiton on site. The controls are operated using ergonomic menus – divided into operation and service functions. Measured values and additional information are available from the colored display.

Fitted with the corresponding communication module, the INTECONT® Tersus connects optimally via fieldbuses to automation structures. The Ethernet network connection is included in the standard features.

**Function**

The functions of the INTECONT® Tersus differ depending on the scale type. However, the standard features are always the same:

- Device accuracy for weighing tasks better than 0.05 %
- Manual and/or automatic zeroing
- Rough/fine controls for precise backlash
- High electromagnetic compatibility
- Galvanically separated exits
- Feed quantity impulses
- Power fail safe data storage device
- Integrated diagnostic and self-test functions
- Dialog language in German, English, Italian, Spanish and French or other loadable languages, including Chinese or Russian (Cyrillic)
- Factory settings for easy, quick connection
- Automatic adjustment programs, self-starting taring
- Maintenance-interval input with signalisation
- Status, event, adjustment and quantity protocols
- Simulation operation for test and learning purposes possible

**Scale-specific functions**

The actual feedrate is calculated corresponding to the mechanics used:

- Belt load and belt speed for belt weighers
- Reaction force for solids flow meters
- Direct mass current measurement using coriolis force for mass flow meters

Alongside the extensive standard features, the following scale specific characteristic features are realized:

- Belt weighers
  - Precise belt speed measurement
  - Belt influence compensation (BIC)
  - Monitoring of the belt creep and belt loop creep
  - Movement of the weighing at the discharge point
  - Legal-for-trade ability (please request separately)
- MULTISTREAM® solids flow meters
  - Adjustment to the measuring chute characteristic curve
- Coriolis mass flow meters
  - Precise rotational speed and torque measurement

# Technical Data

| | |
|---|---|
| **Display** | TFT graphic display with adjustable brightness |
| **Keyboard** | 22 buttons |
| **Supply voltage** | 24 VDC +50 % / -25 %, max. 20 VA |
| **Temperature range** | Operation temperature:<br>Standard device:      -25 °C … +60 °C<br>Able for legal-for-trade and ATEX device:      -20 °C … +40 °C<br>Storage temperature (all devices):      -40 °C … +80 °C |
| **Scales connection** | Power supply:      12 V alternating voltage<br>Load cell impedance:      $R_{min}$. 80 Ω<br>Cable length:      max. 1000 m |
| **Housing** | Operating panel rack model IP54, optional bracket for IP65<br>Protect keyboard and display against longer, direct sunlight. |
| **Binary inputs** | 5 x optocouplers 18 … 36 VDC, type 5 mA<br>1 x NAMUR and 1 x NAMUR/voltage 0.04 … 3,000 Hz |
| **Binary outputs** | 8 x relays, max. 230 V, 8 A ohm / 1 A inductive |
| **Impulse output** | 1 optocoupler for totalizing counter 24 V, 0.1 A, max. 10 Hz |
| **Analog outputs** | 2 x 0(4) ... 20 mA, load max. 500 Ω, galvanically isolated |
| **Analog input** | Current 0(4) … 20 mA, input impedance 100 Ω, galvanically separated,<br>or voltage 0 … 10 V |
| **Serial interfaces** | Interface 1: EasyServe / Interface 2: Printer / Interface 3: Large display |
| **Power supply VNT0650 internal (optional)** | 90 … 264 VAC / 24 VDC |
| **Fieldbus (optional)** | Can be selected from: Modbus-RTU, PROFIBUS DP, DeviceNet, Modbus-TCP, EtherNet/IP, PROFINET IO |
| **Analog signal card (optional) VEA 20451** | 2 Analog outputs 0(4) … 20 mA, load max. 500 Ω,<br>galvanically isolated, common potential<br>2 analog inputs 0(4) … 20 mA, input impedance 100 Ω<br>galvanically isolated, common potential |
| **ATEX** | Optional approval for use in explosive atmosphere (zone 22) at front |

# Dimensions

## Front-of-panel unit
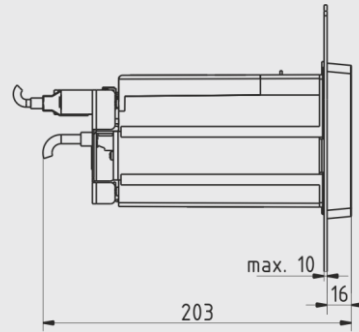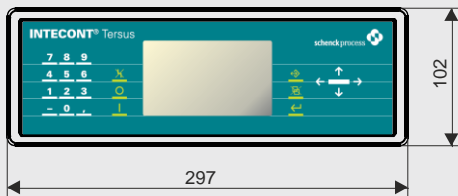


Panel cutout: 282 $^{+0.5}$ x 88 $^{+0.5}$ [mm]
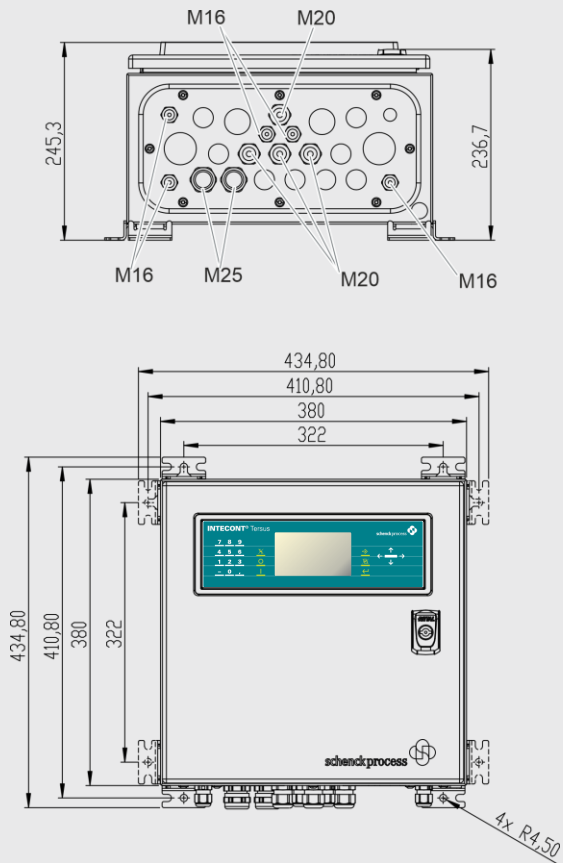
## Wall-mounted housing with inspection window
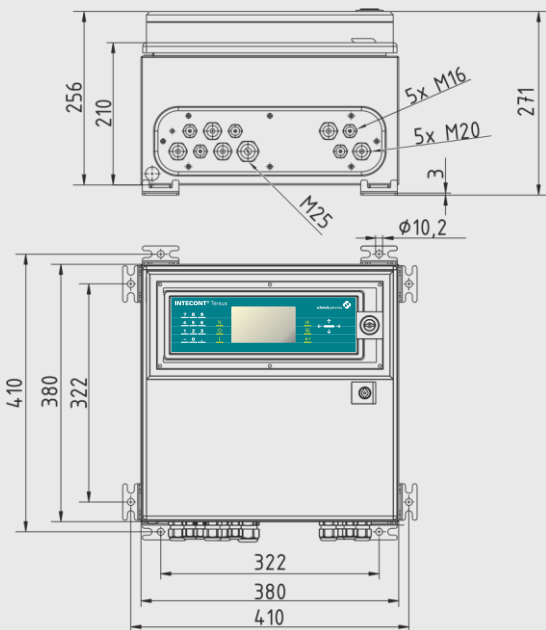


## Stainless steel housing (Ex-zone 22)
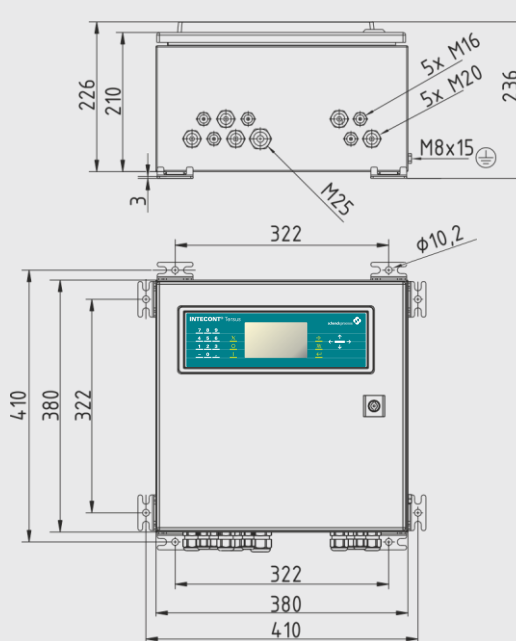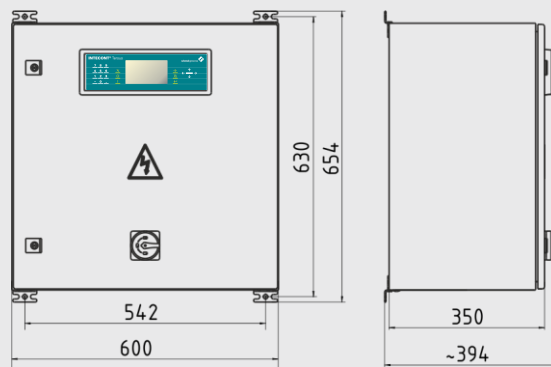
## Dimensions

### Wall-mounted housing standard



### Wall-mounted housing for expansions

# Type Code

| ITE: | aa. | bb. | cc. | dd. | ee. | ff |
|---|---|---|---|---|---|---|
| **Product Name** | **Software** | **Housing** | **Fieldbus** | **Input/Output Extension** | **Power Supply** | **Proximity Sensors Supply** |
| INTECONT® Tersus | | | | | | |
| | BW: belt weigher<br>BWLFT: Legal-for-trade belt weigher<br>MC: Coriolis mass flow meter<br>IF: MULTISTREAM solids flow meter | | | | | |
| | | EG: Panel mount unit<br>EG3D: Panel mount unit for frontal installation in EX zone 22 | | | | |
| | | | 0: Standard Modbus-TCP<br>SS: Modbus-RTU<br>PB: PROFIBUS DP<br>PN: PROFINET IO<br>CB: DeviceNet<br>EI: EtherNet/IP | | | |
| | | | | 0: No extension<br>EA: Extension VEA 20451 | | |
| | | | | | 0: No internal power supply<br>NT: Internal power supply VNT0650 | |
| | | | | | | No specification: Standard [3G] [3D] Ex-i:<br>Ex-i-supply for sensors in EX zone 2 or 22 |
| **For example:** | ITE:BW.EG.PB.0.0 = | INTECONT® Tersus for controlling a belt weigher in a standard rack model with PROFIBUS fieldbus interface | | | | |

# Basic Units

| Type Code | Material Number |
|---|---|
| ITE:BW.EG.0.0.0 | V082002.B01 |
| ITE:BWLFT.EG.0.0.0 | V082007.B01 |
| ITE:MC.EG.0.0.0 | V082004.B01 |
| ITE:IF.EG.0.0.0 | V082005.B01 |

# Extensions, Accessories

| | |
|---|---|
| **Wall-mounted housing** | Wall-mounted housing IP65 incl. power supply 90 … 264 VAC / 24 VDC<br>Optional lockable window available for the display and keyboard or in a stainless steel version |
| **Power supply, external, desk-top model** | 90 … 264 VAC / 24 VDC |
| **Event printer** | Printer with serial RS232 interface and system cable |
| **Large display** | Selectable from:<br>VLD 20100 (LED, 100 mm);<br>VLZ 20045 (LCD, 45 mm); VLZ 20100 (LCD, 100 mm) |
| **Control cabinets and device frames** | Control cabinets and device frames for multiple INTECONT® Tersus with or without infeed |

## Accessories

| Description | Type | Material Number |
|---|---|---|
| **Fieldbuscommunication modules** | | |
| Modbus-RTU | VSS 28020 | V081902.B01 |
| PROFIBUS DP (Slave) | VPB 28020 | V081901.B01 |
| DeviceNet | VCB 28020 | V081903.B01 |
| EtherNet/IP activation | VET 20700 | V040035.B01 |
| PROFINET IO (Slave) | VPN 28020 | V097103.B01 |
| **Further options** | | |
| Installed power supply | VNT0650 | V082050.B01 |
| Analog signal card with 2 analog inputs and 2 analog outputs | VEA 20451 | V054098.B01 |
| Operating panel installation kit for protection class IP65 for device front | | V082039.B01 |
| Service-Software EasyServe | VPC 20150 | E144541.01 |
| **Large displays** | | |
| Large 5-digit display, LED, 100 mm digit height | VLD 20100 | V090252.B01 |
| Large 6-digit display, LCD, 45 mm digit height | VLZ 20045 | V067304.B01 |
| Large 5-digit display, LCD, 100 mm digit height | VLZ 20100 | V066611.B01 |