INTECONT® Tersus
Mass flow rate measurement

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

Application

The INTECONT® Tersus control electronics are used specifically in 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 LCD 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 langiages, 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

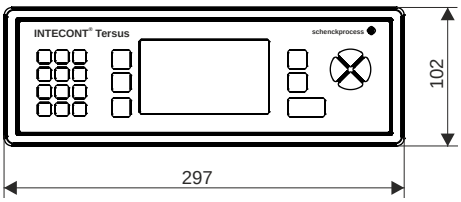
Alongside the extensive standard features, the following scaleßspecificcharacteristic features are realized:

- 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 Eichfähigkeit (please request separately)
- Solids flow meters
  - Adjustment to different measuring chute characteristic curves
- Coriolis mass flow meters
  - Precise rotational speed and torque measurement

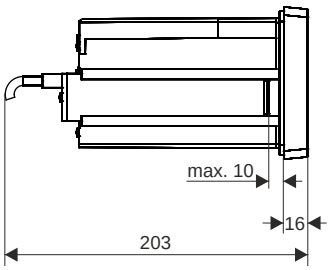
Technical data

Display	LCD graphic display with adjustable brightness
Keyboard	22 buttons
Supply voltage	24 VDC +50 % / -25 %, max. 20 VA
Temperature range	Operation temperature: Standard device: -25 °C … +60 °C Able for legal-for-trade and ATEX device: -20 °C … +40 °C Storage temperature (all devices): -40 °C … +80 °C
Scales connection	Power supply: 12 V alternating voltage Load cell impedance: $R_{min.}$ 80 Ω Cable length: max. 1000 m
Housing	Operating panel rack model IP54, optional bracket for IP65 Protect keyboard and display against longer, direct sunlight.
Binary inputs	5 x optocouplers 18 … 36 VDC, type 5 mA 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, or voltage 0 … 10 V
Serial interfaces	Interface 1: EasyServe / Interface 2: Printer / Interface 3: Large display
Power supply VNT0650 internal (optional)	85 … 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) VEA0451	2 Analog outputs 0(4) … 20 mA, load max. 500 Ω, galvanically isolated, common potential 2 analog inputs 0(4) … 20 mA, input impedance 100 Ω galvanically isolated, common potential
ATEX	Optional approval for use in explosive atmosphere (zone 22) at front

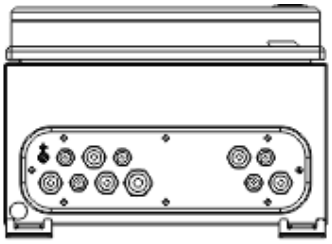
Front-of-panel unit

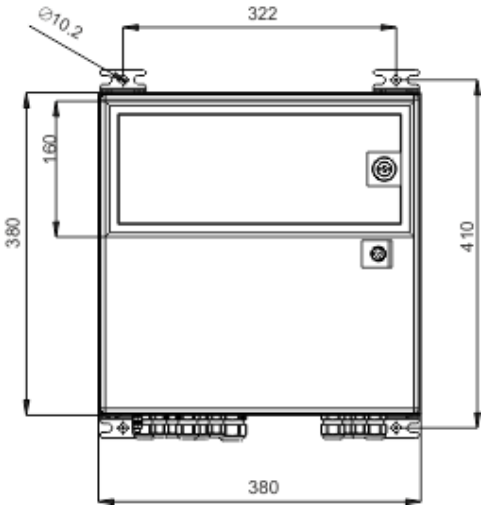


Panel cutout
282 $^{+0,5}$ x 88 $^{+0,5}$

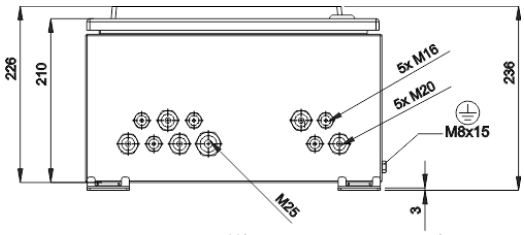


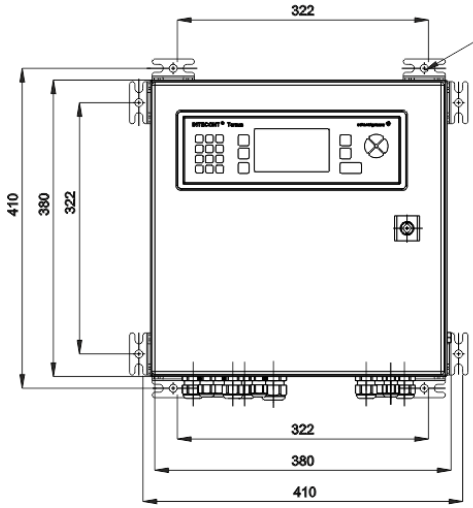
Wall-mounted housing with inspection window



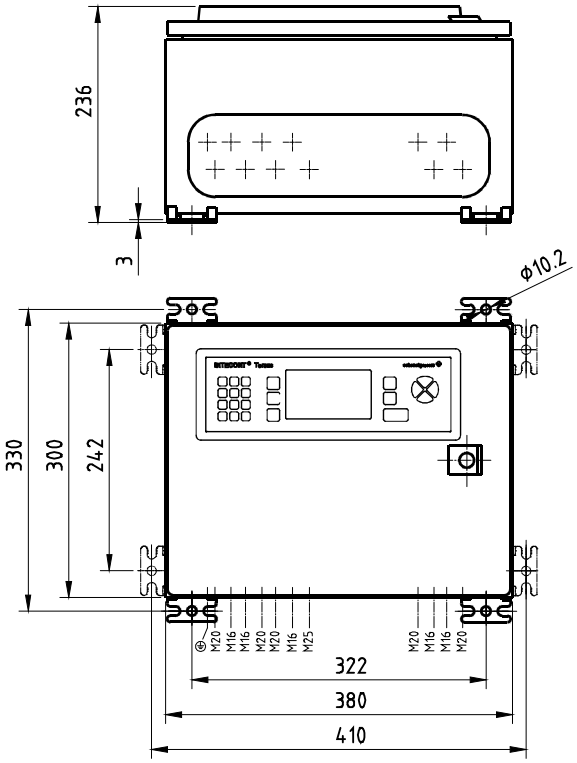


Stainless steel housing (Ex-zone 22)

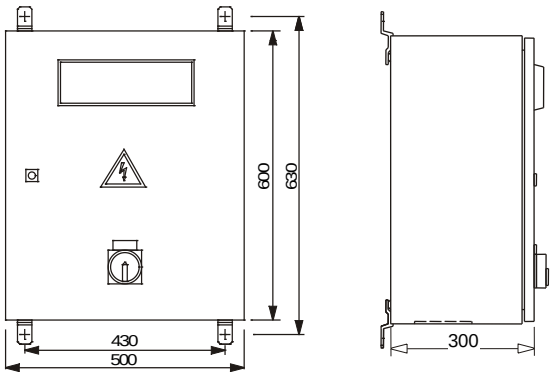




Wall-mounted housing standard



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					
	BWLFT: Legal-for-trade belt weigher					
	MC: Coriolis mass flow meter					
	IF: MULTISTREAM solids flow meter					
		EG: Panel mount unit				
		EG3D: Panel mount unit for frontal installation in EX zone 22				
			0: Standard Modbus TCP			
			SS: Modbus-RTU			
			PB: PROFIBUS DP			
			PN: PROFINET IO			
			CB: DeviceNet			
			EI: EtherNet/IP			
				0: No extension		
				EA: Extension VEA0451		
					0: No internal power supply	
					NT: Internal power supply VNT0650	
						No specification: Standard
						[3G] [3D] Ex-i: Ex-i-supply for sensors in EX zone 2 or 22

Extensions, accessories

Wall-mounted housing	Wall-mounted housing IP65 incl. power supply 85 … 264 VAC / 24 VDC Optional lockable window available for the display and keyboard or in a stainless steel version
Power supply, external, desk-top model	85 … 264 VAC / 24 VDC
Event printer	Printer with serial RS232 interface and system cable
Large display	Selectable from: VLD 20100 (LED, 100 mm); 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 nummer
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