



IT8000E *BELT*

W&M Approved Weighing Terminal for Belt Scales

The industrial weighing terminal **IT8000E BELT** captures continuously the quantity of bulk material conveyed over a beltweigher for both, batching and receiving operations.

IT8000E BELT connects to a beltweigher structure with one load receptor with one or several analog load cells. The weighing terminal is suitable for harsh environment weighing locations, it is incorporated in a stainless steel desk-top / wall-mount or panel-mount housing with high ingress protection.

IT8000E BELT operates as stand alone unit or in combination with a PLC or a SCADA system. It can be configured for the simple capturing of quantities, but also for complex batching applications with preset target and adjustable preact correction.

Scale connection via A/D converter

The A/D converter provides fast update rates together with excellent weighing performance and high immunity against electromagnetic interference.

Connection of pulse wheel

IT8000E BELT provides a configurable interface for a pulse wheel to capture the belt speed. It can use incremental encoders with push-pull or open collector output. Inductive sensors may be used in applications that are not subject to

verification requirements. As an alternative, operation without sensors is also possible for installations that are not subject to verification.

Powerful PID controller

IT8000E BELT provides a PID controller for feed rate monitoring. The PID controller allows tracking of the actual feed rate with reference to the target by adapting either the material input or the belt speed, through a closed loop control with analog output or connected frequency inverter. The target flow may be adjusted by keyboard, analog input or fieldbus at any time, also during running operation.

PLC interface

IT8000E BELT can be connected to a PLC via Ethernet/IP, Profibus DP, Profinet or with Modbus TCP over Ethernet.

Data transmission

Configurable data output for simple interfacing, transmission in continuous mode or on request.

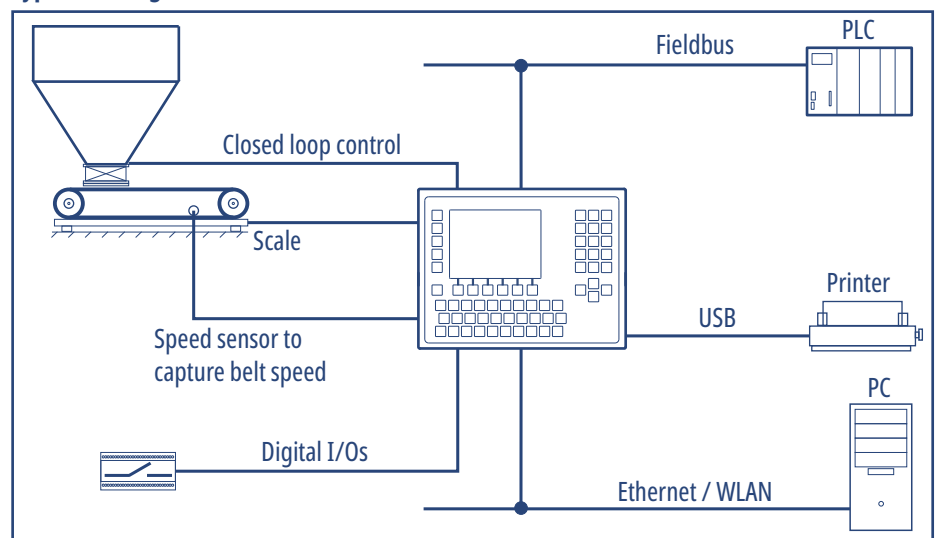
External I/Os

Up to 4 freely configurable inputs and outputs, expandable to 8 with external I/O module.

Count pulse

For the connection of external counters.

Typical Setting:



Display and keyboard

5.7" color TFT display. Main display with current flow rate (kg/h or t/h) and process status. Additional display switchable between conveyed quantity, flow rate, total quantity, belt load and belt speed.

Large-character status display with conveyed quantity and total quantity. Graphic display of belt load and belt speed and operator prompting.

In batching mode also display of target and remaining quantity. Alphanumeric sealed membrane keyboard with function and scale keys.

Weighing electronics

Integrated signal amplifier to connect a force transducer with one or more analog strain gauge load cells (overall impedance 43–3,300 Ohm), W&M approved resolution of 10,000 d, internal resolution 524,000 d. Update rate 50–800/sec. Accuracy classes 0.5, 1 or 2.

Calibration

Calibration of beltweigher by entry of load cell and sensor data. Verification or fine adjustment through comparison of conveyed quantity on a reference scale.

Configuration

IT8000E BELT is a modular system. A complete unit consists of the basic unit IT8000E, an A/D converter, interfaces, the speed sensor and the application program **BELT E**.

Interfaces

- Ethernet interface (option WLAN): Integrated Ethernet interface with selectable IP address, for data transmission and/or remote diagnosis
- Serial interface (option) for connection to supervisory control system or remote display, RS232, 20mA CL (passive) or RS485. Format / protocol selectable. Transmission of conveyed quantity and/or flow rate. Alternatively, transmission also on request with additional commands to reset counters or set the scale to zero
- Freely configurable digital I/Os with internal PIM modules, optoisolated 24 V DC, 100 mA, external relay module, Ethernet/IP, Profibus DP, Profinet or over Modbus TCP:
 - Outputs configurable for: Ready, Batching active, Zero setting, Pre-signal, Done, Quantity pulse, Running, Warning, Error, Watchdog, Test weight;
 - Inputs configurable for: Start, Stop, Start/Stop, Release, Set zero, Abort, Reset fed quantity, Reset total, Print release.

Precise flow rate control

- Direct control of feeding device or belt driving unit through analog output or serial RS485/RS232 connection to frequency inverter
- Optional operation with powerful PID controller featuring freely adjustable tuning constants for real-time feed rate monitoring and controlling
- Operation with or without frequency inverter

Analog output (option)

To output the current flow rate or belt load; resolution 15 bit, 32,000 divisions; 0–20 mA, 4–20 mA, 0–10 V or 2–10 V.

Pulse wheel input

Single- or dual-channel mode, to capture the belt speed, 5–10 V DC, frequency range 2–8,000 Hz, min. 30 pulses/m.

Incremental encoders with push-pull or open collector output (10 V) are supported. Inductive sensors may be used in applications that are not subject to verification requirements. Also, operation without sensors is possible for applications that are not subject to legal control, e.g. for conveyors running at constant speed. Complete speed sensors consisting of wheel, suspension and encoder can be supplied on request.

Internal W&M approved weight storage

For approx. 32,000 counter values

Electrical connections

110 (–15 %)–240 (+10 %) V AC; 50 / 60 Hz, option: 12–30 V DC, power consumption max. 20 VA.

Operating temperature

–10 °C (+14 °F) to +40 °C (+104 °F), max. 95 % relative humidity, non-condensing.

Accessories

Remote display, relay module, and others (ask for details).

Ex2/22 version

For installation in Ex zones 2 and 22.

Construction:

Desk/wall version



- Stainless steel housing, IP69K, NEMA 4X
- Dimension W x H x D: 330 x 239 x 134 mm (13.0" x 9.4" x 5.3")

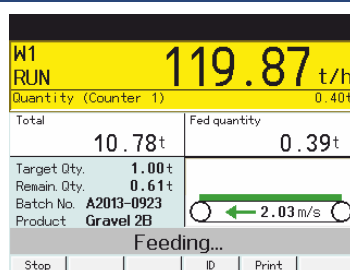
Panel-mount version



- Stainless steel housing, fascia plate protected to IP69K, NEMA 4X
- Dimension W x H x D: 285 x 224 x 69 mm (11.2" x 8.8" x 2.7")
- Cutout in panel: 268 x 207 mm (10.6" x 8.1")

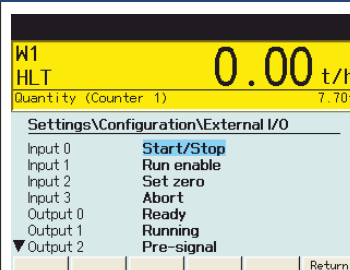
Display / operation:

Batching mode



Display of flow rate (large characters) and quantities. Graphic display of operational and process status.

Entries / configuration



User-friendly input menus. Comprehensive configuration options, e.g. for external I/Os.

Directives: 2014/30/EU, 2014/32/EU, 2014/35/EU

Standards: EN 45501, OIML R 76-1, EN 61000-6-2, EN 61000-6-4, NAMUR NE21, EN 62368-1, OIML R 50



EU type-examination certificate as continuous totalizing automatic weighing instrument



ETL certified in accordance with UL 62368-1 and CSA C22.2 No. 62368-1



EMI compliance with FCC Part 15



Measurement Canada: Approval as indicating element



NTEP approval as indicating element



Type-examination certificate as continuous totalizing automatic weighing instrument

EtherNet/IP

