

\* The I 400 MBS-external system link is implemented by one of the three interfaces (free choice) - Information exchanged : See Table 1 and Table 2.  
 \*\* Ethernet TCP/Modbus and PROFIBUS-DP: available either by network card of the indicator, or by the I400 G-BS coupler (options).  
 \*\*\* Information exchanged: See analog outputs 4-20 mA.

**Your Authorised Distributor**

Non contractual illustrations. Precia-Molen reserves the right to alter the characteristics of the equipment described in this brochure at any time.

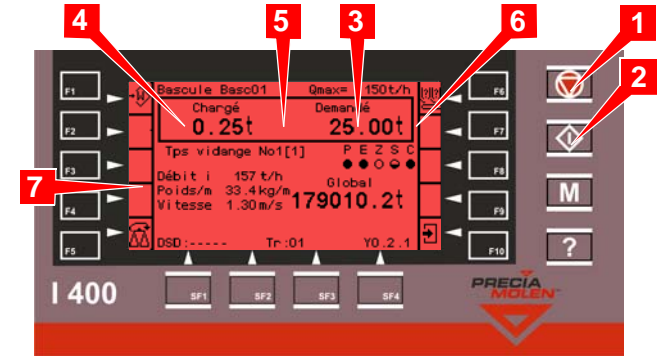
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**I 400 MBS**  
 (Multi Belt Scale)  
 Terminal for multi belt scale

01/2011 04-32-82-1 FT

**Loading screen with preselection**



**Application**

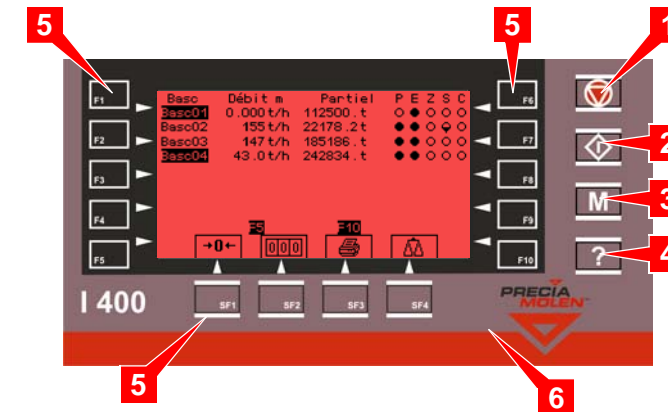
The I 400 MBS multi belt scale is designed to measure variable rate flows of all bulk products, without limit of capacity. It is connected to transmitters (1 to 8).

Each transmitter integrates a board measuring weight and acquiring running speed of the conveyor belt.

The link between the terminal and the transmitters is ensured by a CAN Open fieldbus (up to 500 metres).

**Operator interface**

**Main screen**



1. Stop of cycle.
2. Start of the cycle.
3. Access to metrological data display screen.
4. Choice of intervener level.
5. Multifunction keys F1 to F10 and SF1 to SF4 defined in the application and represented by an icon on screen.
6. Validation bar.

Up to 8 scales can be supervised by means of this screen. The F5 and F10 function keys are used to select the information displayed in each column.

**Information displayed**

1. Stop of cycle.
2. Start of the cycle.
3. Loading weight requested.
4. Current loading totalisation.
5. Number of the active extractor.
6. Scale status pictograms.
7. Additional information : flow rate, weight per meter, speed, global total.

**Configuration - I 400 MBS**

The I 400 MBS system manages 4 levels of intervention. Each level offers or not access to certain functions of use or setting/configuration of the indicator. See the installation manual of the I 400 BS terminal (04-37-01 MI).

**Hardware configuration**

Using the I 400 MBS software requires the following minimum :

- an I 400 D-P BS terminal, embedded version or I 400 D-S BS in stainless steel housing version.
- an I 400 TB BS transmitter, fastened to the continuous weighing infrastructure, to which we connect the strain gages of this infrastructure and conveyor belt speed detector.

Each I400 TB BS indicator can be connected to any type of continuous weighing infrastructure installed in healthy or ATEX 2-21 zone.

It allows to connect :

- The strain gage sensors of the continuous weighing infrastructure.
- A conveyor belt speed detector.

Our weighing infrastructures associated with the I 400 SBS system are certified for commercial transactions, classe 0.5 / 1 or 2, in fixed or variable belt speed.

## Functions

### Weighing

- Weight and speed measurement.
- Instant flow calculation.
- Average flowrate with adjustable time constant.
- Global totalling with reset protected by code (in use out of legal metrology).
- Partial totalling.
- Minimum and maximum flow monitoring, checked with "On/Off" outputs (TOR).
- Launch request from zero, manual or automatic.

### Set point preselection

- Control of 1 to 8 weigher conveyor feed extractors.
- Automatic calculation of the belt tail with early stop of the extractors.
- Conveyor belt started empty or loaded.
- On-Off command of extractors and weigher conveyor.
- Data saved in the DSD module.

### Ticket printing

- Company name on ticket header.
- Manual or automatic printing at programmable time intervals.
- Automatic printing of the lot end loading ticket, when reaching the set point.

### USB memory stick

- Virtual printing configurable to USB memory stick. (See Examples.)
- Backup / restore measurement parameters and scale parameters.

## Communication

### Serial link

A controller or a supervision system can be connected to the I 400 SBS indicator using the protocol :

- Modbus RTU over RS 232 or RS 485 serial link.

### Field bus

The same systems can be connected to the native CAN OPEN interface used by PRECIA MOLEN through one of the following protocols :

- Ethernet TCP/Modbus
- PROFIBUS-DP
- EtherNet/IP
- DeviceNET

### Commands and set points received

Zero request
Partial totalling reset
Loading : preselection value
Start, stop or hold load

Table 1

### Information transmitted

DSD number
Total loaded or Total DSD
Partial total
Instant flow or Average flow
Weight per metre
Belt speed

Table 2

## Printing

### Examples

Ticket	Batch summary
<pre> PRECIA MOLEN BP 106 07001 PRIVAS Cedex le: 17/09/10 : 17:20 Partiel 37.40 t Global 327 t           </pre>	<pre> 4 MBS 21/08/10 13:43 Début du lot le 21/08/10 à 13:43 Tonnage lot 0.09 t  Débit du lot 32.4 t/h Temps en charge 0:00 h Temps à vide 0:00 h Temps d'arrêt 0:00 h Débit de pointe 31.4 t/h Temps surdébit 0:00 h Temps sousdébit 0:00 h  Derniers zéros effectués: 01/06/10 17:12 +0.08% 02/06/10 16:11 +0.12% 03/06/10 16:11 -0.24% 05/06/10 16:11 +0.02% 12/06/10 16:11 -0.16%           </pre>

### Monitoring program

- Monitoring a production batch.
- Display the batch start date/time.
- Batch totalling.
- Average batch flow.
- Batch peak flow.
- Display of the running time conveyor empty and loaded, as well as production stop time.
- Display of history of last five (metrological) zeroes performed.

## Description of input-output\*

### Input allocation

no.	Function
5	Zero reset of partial totalling
6	Zero reset of global totalling
7	Weigher belt running
8	Extractor running
9	Selection among 2 material ratios (1 input)
10	Selection among 4 material ratios (2 inputs)
12	Totaller blocking
16	Monitoring summary reset
27	Sliding detector
28	Segmented zero synchronisation detector
101	Load request (with preselection)
102	Load hold (with preselection)
103	Load abort (with preselection)
104	Selection among 2 extractors (1 input)
105	Selection among 4 extractors (2 inputs)
106	Selection among 8 extractors (3 inputs)
110	Launch start or end batch printing

### Analog outputs 4-20 mA

This information can be sent to a computer system or a display.

Function
Instant flowrate
Average flowrate
Weight per metre
Conveyor belt speed

### Output allocation

no.	Function
1	Zero in progress
2	Zero made and valid
3	Weigher belt running
4	Extractor running
5	Value monitored > Max threshold
6	Value monitored < Min threshold
9	Value of the active material ratio (bit 0)
10	Value of the active material ratio (bit 1)
11	Flow out of limits (Legal metrology only.)
12	Zero reset pulse of a remote meter
15	Unit (Either t and t/h, or kg and kg/h)
25	Weight acquisition fault
26	Parameter fault
27	Belt sliding fault
28	Segmented zero fault
29	Zero out of limits
30	Partial totaller pulse
31	Global totaller pulse
32	Weight above maximum scale range
33	Loading in progress
34	Extractor control (loading)
35	Weigher belt control (loading)
36 to 43	Individual control of each extractor
50	Partial totaller pulse

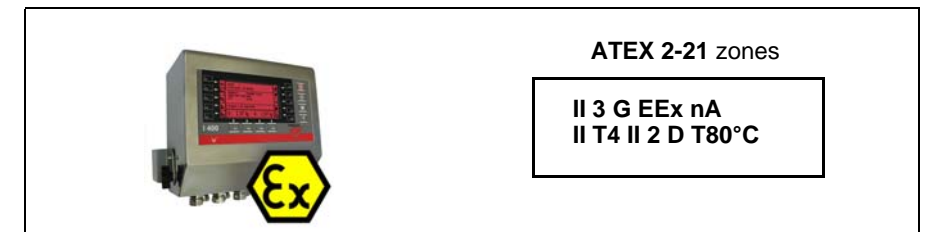
- \* According to options :  
 - On/Off inputs-outputs available in the terminal and transmitter.  
 - 1 analog output per transmitter or analog module on terminal.

## Options and accessories

- Stainless steel housing



- Ex version



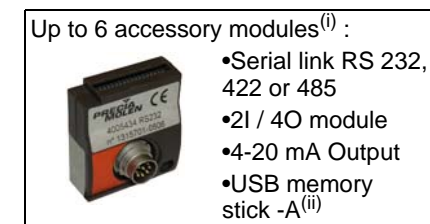
- Display



- Printer



- Communication accessories



- Data storage device



(i) Connection by spring terminals (except USB -A memory stick)  
 (ii) Not available if terminal installed in ATEX zone.