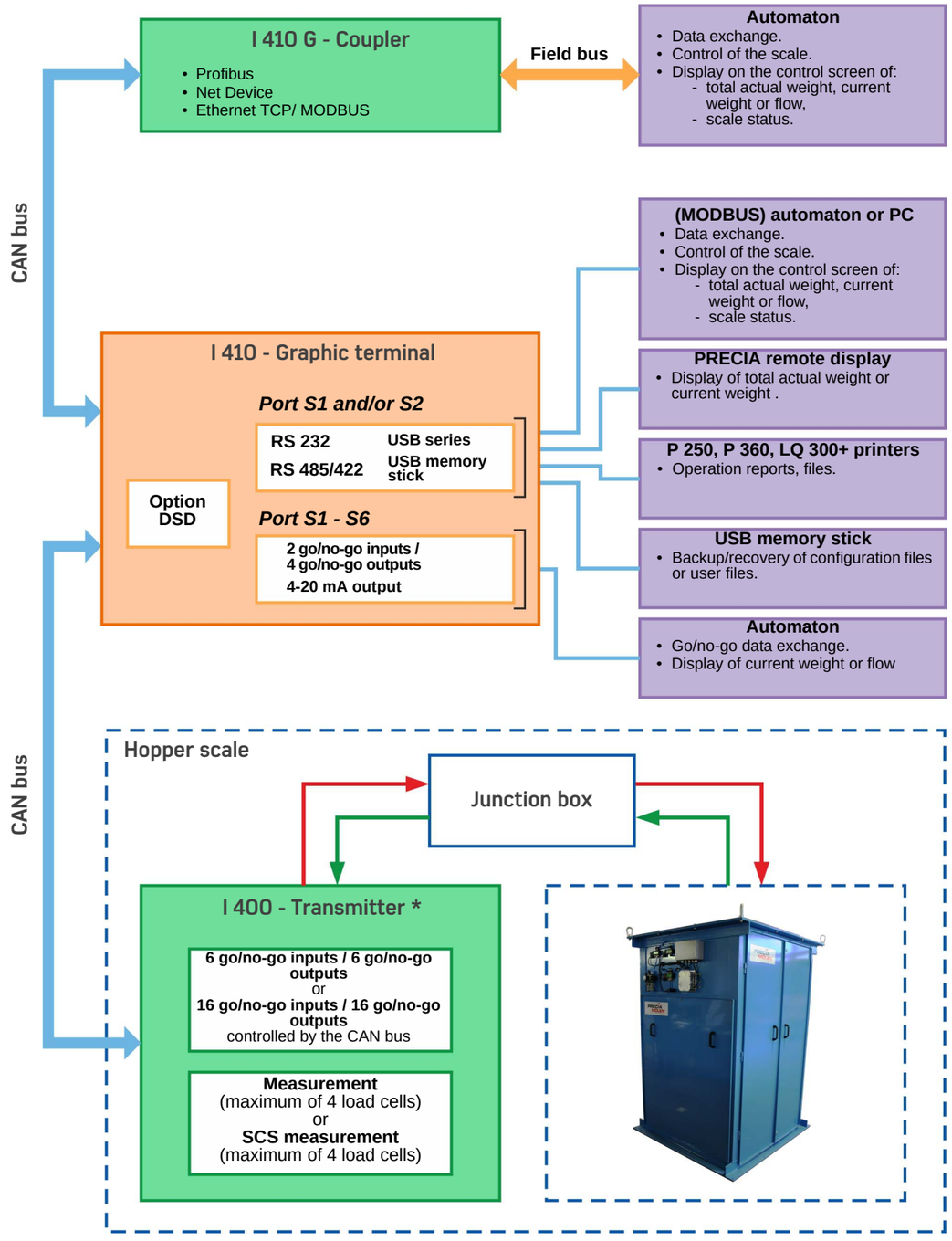
Configuration block diagram



Your specialist

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PRECIA MOLEN™ WORLDWIDE WEIGHING

I 410 ABS
Discontinuous Weighing Software

Application

The I 410 system equipped with I 410 ABS software is the measuring and control device for PRECIA MOLEN hopper scales.

The I 410 ABS system can substitute for any type of indicator on existing installations.
The I 410 ABS software may control any type of hopper scale:

- hybrid with levers or 100% electronic,
- with one or several filling gates.

This software meets the three fundamental requirements of this field of application:

- Unloading,
- Outloading,
- Product transfer.

Functionalities

I 410 instrumentation can be used to obtain high performances (up to 500 cycles per hour or more depending on the product type).

I 410 ABS instrumentation has many functions:

- Quick and easy adapting tothe different products handled.
- Automatic adapting to variations in product feed flow.
- Product leakage checks.
- Automatic check weigh, if the hopper scale is equipped with the automatic placing of test weights.
- Management of the product feed conveyor belt based on a pre-entered set point.
- Management of the printing of startup and completion reports either as a hard copy or to a USB memory stick (virtual printer).
  Possibility to print error reports and/or weigh reports as they are received during an automatic cycle.
- Management of a remote display showing the total actual weight for the current operation or the current weight.
- Retrieval of data and totals for operation files on a PC or USB memory stick for IT processing as necessary.
- Recording of the results of operations in a PC-compatible file for use in advanced processing.
- Availability of operation files to schedule a sequence of operations.
  - Possibility to sequence operations automatically.
    E.g.: train loading – sequencing of one operation per wagon.
  - Possibility to suspend an operation to fit in a different operation and then return to the previous operation.
    E.g.: when loading a ship with several holds.
- Possible remote control (automatic mode) by an automaton via an industrial field bus: CAN Open, MODBUS, TCP/MODBUS, Profibus-DP, DeviceNet.
  In this case, the I 410 ABS terminal becomes a slave terminal.
- If the I 410 ABS terminal is a master terminal (autonomous mode), it is possible to receive information on one single operation in progress in real time via a field bus.
  Refer to the user manual for more information on I 410 ABS, 04-41-60 MU.
- In option, the SCS* (Self Checking Scale) system maintains the metrological accuracy over time.
  This function is achieved by two separate measuring channels (load cells and transmitter).

Configuration

Operating parameters for the I 410 ABS system are organised in several files, based on 4 levels of intervention protected with a password:

- Engineer: Metrological adjustment and configuration of Input/Output.
- Supervisor: Configuration of Operation, Product, Reference and Results files.
- Operator: Definition of set points and acccess to results.
- User level: Rights limited to the selection and start of cycles.

This segmenting of parameters renders the I 410 system modular and easy to integrate in most industrial processes. This also secures the operation of the application by preventing access by an unauthorised operator.

Hardware configuration

The use of the I 410 ABS software requires at least the following basic configuration:

- an I 410 ABS terminal,
- an I 400 TB transmitter,
- for scales:
  - of ABS-X type:
    - a 6 I/O board to install in the transmitter,
    - an I 400 JB ABS (steel) junction box or I 400 JB-S ABS (stainless steel),
  - of ABS-XL type, a RIO 16 E/S CAN box to install on the hopper scale.

** Only available on the ABS-XL hopper scale range.*

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Operator interface

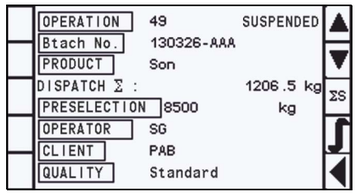
Automatic cycle display

1. Main application screen (display of the current weight and cycle step).
2. **F1**: Validation or rejection of the upper bin low level check.
3. **F2**: Request for upstream circuit draining.
4. **F3**: Full weigh hopper pause.
5. **F4**: Empty weigh hopper pause.
6. **F5**: Access to the cycle monitoring screen (animated block diagram).
7. **F6**: Increased filling rate.
8. **F7**: Reduced filling rate.
9. **F10**: Access to the Operations screen.
10. Automatic cycle stop.
11. Automatic cycle start.
12. Validation.

The function keys F1 - F10 are structured into several access levels. They may have different functions depending on the screen displayed.

Operations screen

This screen shows the parameters of a weighing operation.



User data

File characteristics

Files	Capacity	Code	Designation	Intervention level
Operations	50	4c. alpha.	-	Operator
Product	50	4c. alpha.	20c. alpha.	Supervisor
Reference 1 & 2	100	12c. alpha.	20c. alpha.	Supervisor
Cycle parameter file	20	2c. num.	-	Supervisor
Weighing parameter file	1	1c. num.	12c. alpha.	Supervisor
Results file	500	-	-	-

Structure of the results file

Parameters	Format
Batch nº	12c. alpha.
Operation nº	Num.
Start date	dd/mm/aa
Start time	hh/min
End date	dd/mm/aa
End time	hh/min
Weigh hopper designation	12c. alpha.
DSD or weighing run nº	Num.

Parameters	Format
Operation type	Shipment/Reception/Transfer
Product code	4c. alpha.
Reference code 1	12 digits
Reference code 2	12 digits
Information 1	20c. alpha.
Totaliser set point	Num.
Total for the run	Num.
Operating time	hh/min

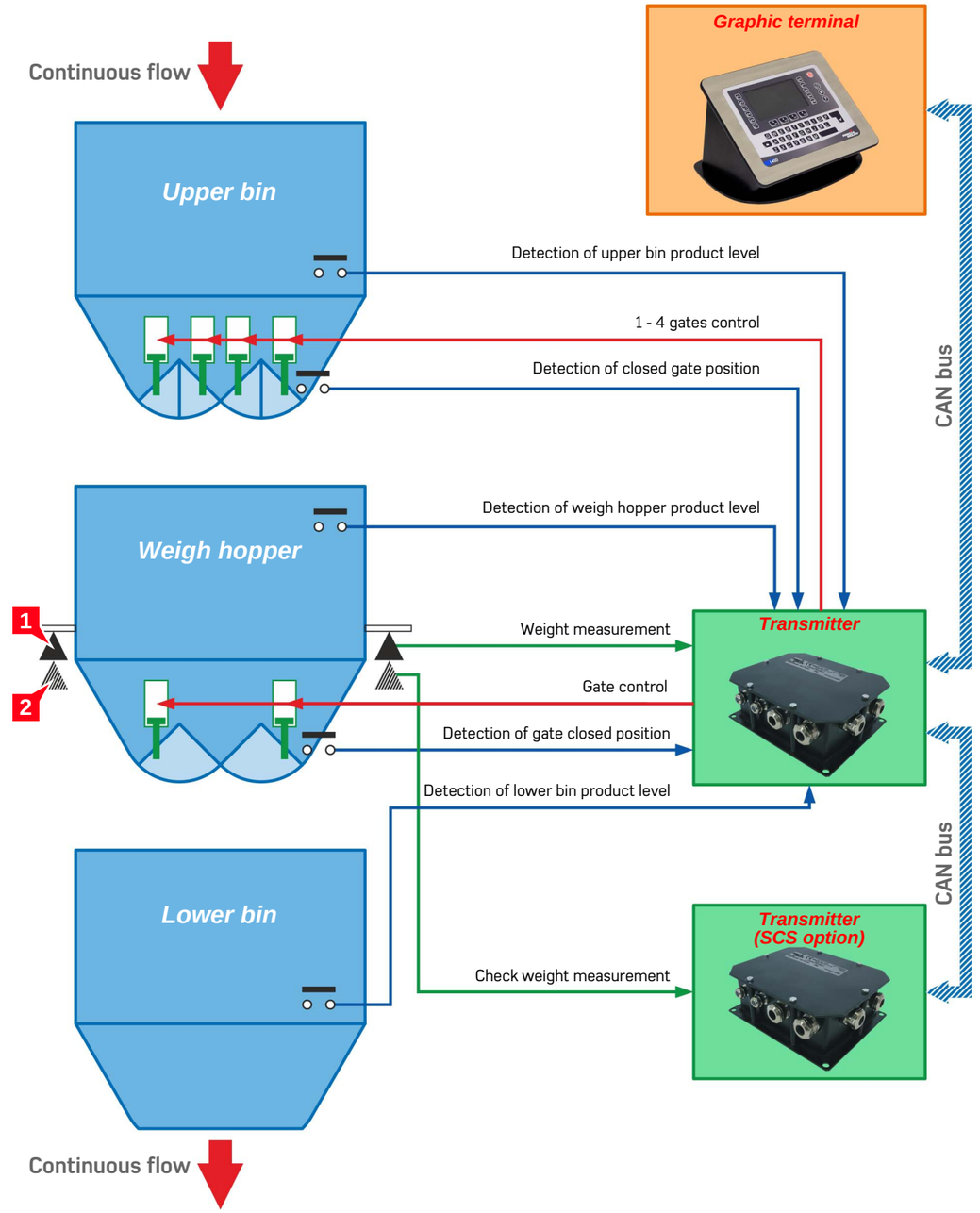
Data storage (DSD)

- Max. number of recordings: 48 000.
- Values saved: DSD nº, total actual weight for the operation, operation number, operation status.

Metrological certification

- According to the OIML R 107/1997 recommendation and 2004/22/CE directive:
  - Proven compatibility of modules according to criteria explained in the WELMEC 2 guide.
- Test certificate of LNE number - NNNNN rev. R of DD/MM/YYYY type.
  Accuracy class: 0.2 - 0.5 - 1 - 2

Block diagram



1. Master load cell channel
2. Slave load cell channel