

TRUCK-X5 System Controller



- Weighing Controller for truck scale applications
- Compact, comfortable, fast
- Easy operator interface
- Charging with Set-point automatic and manual
- Report database to PC
- Comfortable management of database for vehicles, products and addresses
- Comprehensive Statistics
- Internal Alibi-Memory
- Configurable procedures

Now more than ever, process monitoring is a crucial factor for success in the overall industrial process. For example, quick identification of every movement of people and goods as well as incoming and outgoing transport units provides better transparency and effectiveness. Until now, methods for monitoring the operation of weighbridges were too slow to keep pace with the fast movement of goods. This also applied to the processing and recording of relevant data such as, incoming weight, outgoing weight, truck code, site of delivery, customer's name and address.

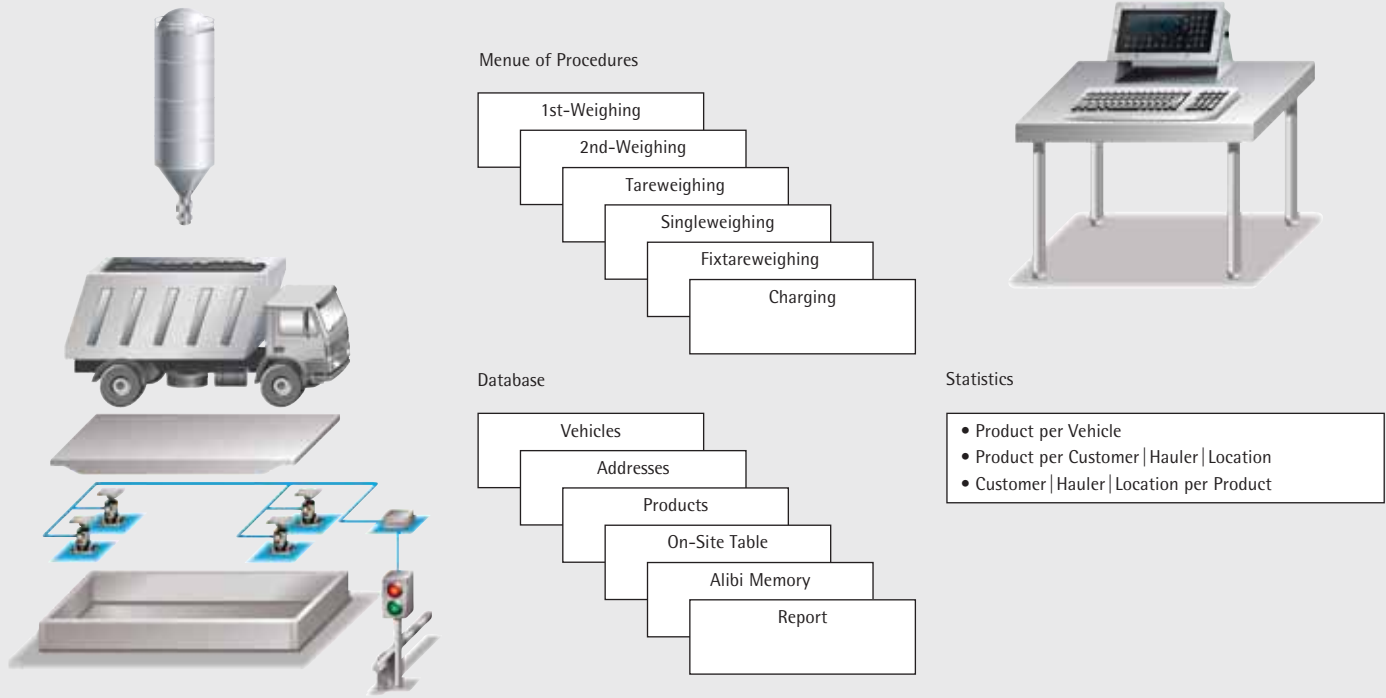
The TRUCK-X5 controller greatly facilitates process monitoring and speeds up data handling enormously.

The TRUCK-X5 controller with the implemented application software fulfills the basic requirements for effective data gathering with weighbridges. With this solution, the weighbridge is operated with a single controller only.

The controller includes the following standard functions:

1. Database with truck, product, address and on-site table, reports
2. Functions like 1st-Weighing, 2nd-Weighing, Tare-Weighing and Single-Weighing, Charging
3. Control of barrier | traffic-light
4. Internal Alibi-Memory
5. Statistics

The TRUCK-X5 is operated with soft-keys on the front panel or an external keyboard connected to the controller.



To combine all current functions for truck scale applications in one device only was the challenge for developing the TRUCK-X5 controller.

Load-cell connection

Sartorius developed especially for truck scale applications the load cell PR 6221 with impedance of 1080 Ω so 10 load cells can be driven without external power supply. The power supply of the TRUCK-X5 can drive up to 8 load cells with 650 Ω due to the minimum impedance of 75 Ω.

Functions

- The above graphic shows the basic functions of the TRUCK-X5 controller. Beside that following parameters are configurable:
- Period of statistic depending on memory space
 - Date | time format
 - Number of printer (3)
 - Number of ticket copies
 - Way of data input
 - User management in 3 levels
 - User specific PIN
 - Control of traffic light | barrier
 - Identification of weighbridge
 - Printlayouts
 - Limits

Alibi-Memory

The TRUCK-X5 has an internal alibi memory with W&M approval. The size will be determined during commissioning. Guideline for the size is the number of weighing performed in approx. 90 calendar days. Once the database is generated you can search the saved data

- Weight
- Date - Time
- Sequence number

with a filter if date, period or sequence number is matching.

Database

Each weighing procedure finalized on the platform will be entered to the report database with all relevant data. The data transmission to a PC take place cyclewise by means of the Powertool 'AccessIt'.

The tables in the database

- Truck with the fields 'Ident' 'Trucknumber' 'Tareweight with user'
- Product with the fields 'Ident' 'Name' 'Intake | Outtake Quantity'
- Address with the fields 'Ident' 'Name' 'Address line1-3'

can be edited to enter a new record, to modify an existing record or to delete a record. The address table contains customers as well as hauler and destinations. The use determines what exactly it is. New records can be added dynamically during a measurement.

Data for Tickets	First	Second	Tare	Fixture	Single
	✓	✓	✓	✓	✓
valid date / time	✓	✓	✓	✓	✓
Order number	1	2	2	-	-
Number of ticket	✓	✓	✓	✓	✓
Weight / date / time first weighing	✓	✓	3	✓	✓
Weight / date / time second weighing	-	✓	✓	-	-
1 st Weighing – 2 nd Weighing	-	✓	✓	-	-
Operator	✓	✓	✓	✓	✓
Vehicle identification	✓	✓	✓	✓	4
Product name	1	2	2	-	-
Totaliser for Intake / Outtake	-	-	-	-	-
Customer Name	1	2	2	-	-
Customer address	-	-	-	-	-
Hauler name	1	2	2	-	-
Hauler address	-	-	-	-	-
Destination	1	2	2	-	-
Description destination	-	-	-	-	-
Comment lines	1	2	2	-	-
fixed text	✓	✓	✓	✓	✓

Remarks 1: if configured and recorded
 2: if configured
 3: = Tare 4: only name, no ID

2nd Weighing Ticket

```

Ticket:      8           Weighbridge 1
User:       Kowalsky
-----
Customer:   Meyer
            Production 12
            Industriestreet 10
            9876 Town

Order:      123
from/to:    Plant 3
            Industri-area
-----
Hauler:     Vieltrans
Truck:      WL-JD 960
Product:    Water
-----
2002.01.18 16:16:37
First Weight:  A    <20.65 kg>

2002.01.18 16:17:19
Second Weight: A    <10.09 kg>

Net:        A    <10.56 kg>

Comments
  
```

Protocols of Statistic

Truck: WL-JD 960	2002.01.18 ... 2002.01.18		
Product	Intake	Outtake	Balance
Water	10.56 kg	89.91 kg	-79.35 kg
Gravel	00.00 kg	396.75 kg	-396.75 kg
--			

Product: Water	2002.01.29 ... 2002.01.29		
Customer	Intake	Outtake	Balance
Jones	00.00 kg	00.72 kg	-00.72 kg
McCormick	200.00 kg	00.00 kg	+200.00 kg
--			



Label
(designed with
NiceLabelExpress)

Security

With the user management and the use of PIN assigned to each operator the access to the operation is protected in a reasonable way. The integral concept with components of the brand Sartorius for weighbridge applications offers the highest possible protection against damages by over-voltage.

Control I|O's

By means of the digital I|O card with 4 inputs and 4 outputs a choice of four predefined PLC programs can be activated to control a traffic light or barrier in accordance to the weighing procedure. Further settings i.e. of the coarse | fine outputs is made with the I/O configuration.

Printer

The configuration menu allows the routing of printouts up to three different printers.

- Log-printer
A one line printout will be generated, which is also accepted as alibi printout for W&M purposes.
- Database | statistic printer
The listing of database and statistic reports can be printed with this device.
- Ticket-printer
The weighing tickets are assigned to this printer. The printouts are defined with a width of 35 characters

Print-Layout

The predefined layouts can be redesigned with two different tools.
 1. Nice-Label Express
 2. During configuration at the front-panel
 3. Programming tool PR 1750 for OEM's

X5 PowerTools (Option)

The powertools are a collection of powerful programs to speed-up commissioning:

FlashIt

for download of programs

LayoutIt

driver for NiceLabelExpress

DisplayIt

let your PC take control of your TRUCK-X5

TranslatIt

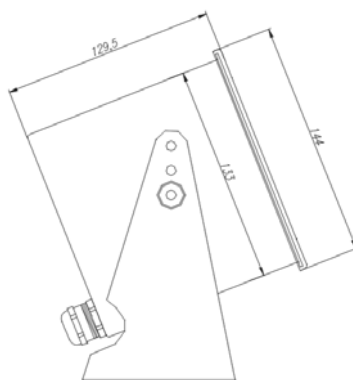
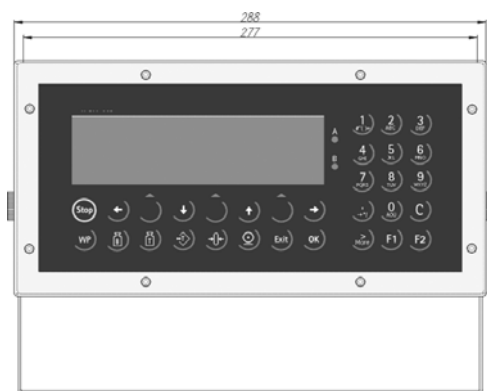
for simple editing of language tables

RecoverIt

saves the complete configuration on your PC.

AccessIt

direct access to the database of your controller for PC editing and downloading.

Technical Data TRUCK-X5

Power supply

115/230 V_{AC} 50–60 Hz or 24 V_{AC/DC}
 Max. 14.5 W/19 VA

Housing

Stainless steel DIN 1.43 01 (B.S. 304)
 Ingress Protection: IP65 eq. to (NEMA: 4X)

Display

7-Digit plus status symbols
 text: 2 lines, 20 characters

Interface

Bi-directional serial interfaces RS232;
 user selectable protocols: Keyboard connector,
 Remote Display, Printer, XON, Jbus, XBPI,
 ModBus, Dust 3964R

Linearity

<0.007 %

Resolution

Max. 330,000 div. (internal) $\hat{=}$ 0.11 μ V/d
 Usable stepwidth 0.4 μ V/d

Accuracy

5000 e class III acc. to EN 45 501;
 OIML R 76 min. verification interval 1.0 μ V/e;

Load cell input

6- or 4-wire
 Load cell supply: 12 V
 Impedance: min. 75 Ω ,

Measuring principle

Ratiometric integrating A|D converter
 Conversion time: 50 ms
 Update rate: 50 ms to 2 s
 Digital filter: 0.1 to 5 Hz

Input signal range

Net range 2.4 mV to 36 mV
 (for 100% maximum capacity)
 Deadload range: 0...33.6 mV

Temperature influence

Live zero T_{K0}: <0.1 μ V/K RTI
 Span T_{Kspn}: <0.006%/10 K

Environmental conditions
Temperatur range***

Operation: -10 °C to +40 °C
 Storage: -40 °C to +70 °C

Conformity:

NAMUR, CE
 ATEX Zone 2/22
 FM Class 1 | Div2

Weight

net: 3.5 kg
 gross: 5 kg

Order information

Type	Description	Order numbers
PR 5610/10	TRUCK-X5 230 V	9405 156 10101
PR 5610/11	TRUCK-X5 24 V _{AC/DC}	9405 156 10111
PR 5610/12	TRUCK-X5 ATEX 2/22+ FM Cl 1/ Div 2 (230 V)	9405 156 10121
PR 5610/122	TRUCK-X5 ATEX 2/22+ FM Cl 1/ Div 2 (115 V)	9405 156 10122
PR 5610/13	TRUCK-X5 ATEX 2/22+ FM Cl 1/ Div 2 (24 V)	9405 156 10131

Options

PR 1713/05	RAM Memory Extension 1 MB	9405 317 13051	included
PR 1799/99	W&M Approval Labels (1 set)	9405 317 99991	
PR 8901/81	Internal Alibi Memory (Licence)	9405 389 01811	included
PR 8001/01	X-Family PowerTools	9405 380 01011	
PR 1713/31	Extended EW Commands	9405 317 13311	
PR 1792/20	AccessIt Licence	9405 317 92201	
PR 1713/91	Panel Mounting kit	9405 317 13911	
PR 1792/13	OPC Server Licence	9405 317 92131	

			SLOT	1	2	3	4
PR 1713/04	Serial interface card (RS232 485)	9405 317 13041		o	x	o	
PR 1713/06	Analogue Output 0 4-20 mA	9405 317 13061	*	o	o	o	
PR 1713/07	1 Analogue Output 4 Analogue Input	9405 317 13071	*	o	o	o	
PR 1713/08	BCD 24 out, 1 in	9405 317 13081		o			
PR 1713/12	Digital 4 In- 4 Output, Opto Opto Output: 31 V, 25 mA	9405 317 13121		o	o	o	
PR 1713/13	DIOS-Master (add. Software required)	9405 317 13131		o			
PR 1713/15	Digital 4 In- 4 Output, Opto Relais Output: 24 V, 1 A	9405 317 13151		x	o	o	
PR 1713/17	Digital 6 In- 8 Output, Opto Opto Output: 31 V, 25 mA	9405 317 13171		o	o	o	
PR 1721/11	Profibus-DP interface	9405 317 21111					o
PR 1721/12	Interbus-S interface	9405 317 21121					o
PR 1721/14	DeviceNet interface	9405 317 21141					o
PR 1713/14	Ethernet interface, 10 MBaud	9405 317 13141					o

o = optional, x = included in delivery

The documentation will be delivered on a CD, a paper version can be ordered separately.

* max. 1 Analogue Output Card

*** The temperatur range for operation can be extended if the number of installed option cards is limited. (Temperature specification on request.)