TRUCK-X5

System Controller

- Weighing Controller for truck scale applications
- Compact, comfortable, fast
- Easy operator interface
- Charging with Set-point automatic and manuel
- 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.

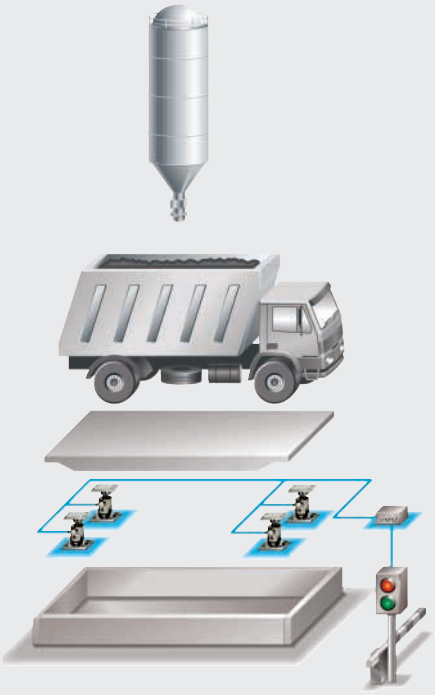
The TRUCK-X5 controller greatly facilitates process monitoring and speeds up data handling enormously.

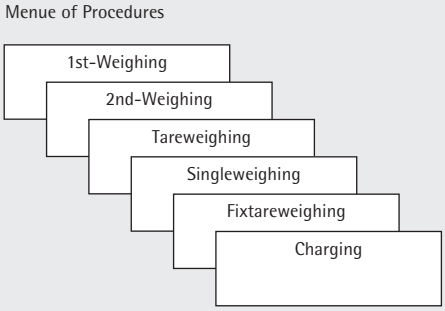
The TRUCK-X5 controller with the implemented application software fulfills the basic requirements for effective data gathering with weighbridges. With this solution, the weighbridge is operated with a single controller only.

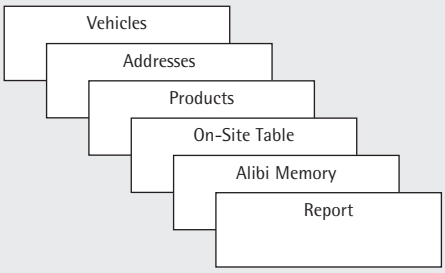
The controller includes the following standard functions:

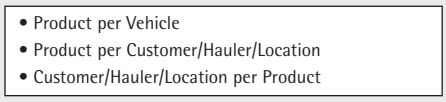
1. Database with truck, product, address and on-site table, reports
2. Functions like 1st-Weighing, 2nd-Weighing, Tare-Weighing and Single-Weighing, Charging
3. Control of barrier/traffic-light
4. Internal Alibi-Memory
5. Statistics

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 PR6221 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	Fixtare	Single
valid date / time	√	√	√	√	√
Order number	1	2	2	-	-
Number of ticket	√	√	√	√	√
Weight / date / time first weighing	√	√	3	√	√
Weight / date / time second weighing	-	√	√	-	-
1st Weighing – 2nd 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 1/0 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 PR1750 for OEM's

X5 PowerTools (Option)

FlashIt
for download of programs

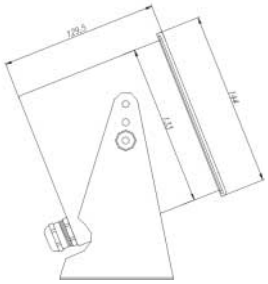
LayoutIt
driver for NiceLabelExpress

DisplayIt
let your PC take control of your TRUCK-X5

TranslateIt
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.



Power supply
115/230 V_{AC} 50-60 Hz
Max. 19 W / 25 VA

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

Housing
Stainless steel DIN 1.43 01 (B.S. 304)
Ingress Protection: IP 65 eq. to (NEMA: 4X)

Order information

Type	Description	Order numbers		SLOT	1	2	3	4
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 Ex-Zone 2/22 (230 V)	9405 156 10121						
PR 5610/13	TRUCK-X5 Ex-Zone 2/22 (24 V)	9405 156 10131						
Options								
PR 1713/05	RAM Memory Extension 1MB	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						
PR 1713/04	Serial interface card (RS 232/485)	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 Ouput: 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 Ouput: 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

Interface
Bi-directional serial interface RS 232;
user selectable protocols: Remote Display, Printer, XON, Jbus, ModBus, Dust 3964R

Linearity
< 0,007 %

Resolution
Max. 330.000 div. (internal) ≙ 0.11 µV/d
Usable stepwidth 0.4 µV/d

Accuracy
5000e class III acc. to EN 45 501;
OIML R 76
Min. verification interval 1,0 µV/e;
suitable for automatic weighing instruments

Load cell input
6- or 4-wire
Load cell supply: 12 V
Impedance: min. 75 Ω,
e.g. 8 load cells with 650 Ω
RAM extension 1 MB

Measuring principle
Ratiometric integrating A/D converter
Conversion time: 50 ms
Update: 100 ms to 2 s,
adjustable in 100 ms steps
4-pole digital filter 0,1 to 5 Hz

Input signal range
Net range 2,4 mV to 36 mV
(for 100 % maximum capacity)
Tare range: 0... 33,6 mV

Temperature influence
Live zero Tk_o: < 0.1 µV / K RTI
Span TK_{spn}: < 0.006 %/10 K

Environmental conditions

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

Electrical safety
According to IEC 1010-1

Vibration
According to IEC 68-2-6, Test Fc

Electrostatic discharge
According to IEC 1000-4-2 Level 3

Supply line
According to IEC 1000-4-4 Level 3

Electromagnetic fields
According to IEC 1000-4-3 Level 2

Radio interference
According to EN 55011