



sartorius

## 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:

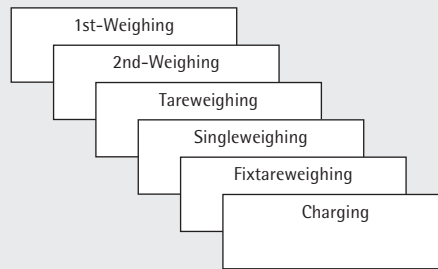
1. Database with truck, product, address and on-site table, reports
2. Functions like 1st-Weighing, 2nd-Weighing, Tare-Weighing and Single-Weighing, Charging
3. Control of barrier/traffic-light
4. Internal Alibi-Memory
5. Statistics

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

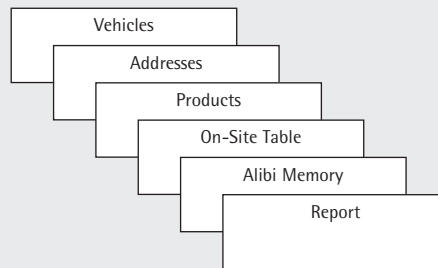
## Weighbridge-Application



Menu of Procedures



Database



Statistics

- Product per Vehicle
- Product per Customer/Hauler/Location
- Customer/Hauler/Location per Product

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  $\Omega$  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  $\Omega$  due to the minimum impedance of 75  $\Omega$ .

### 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	-	√	√	-	-
1 <sup>st</sup> Weighing – 2 <sup>nd</sup> Weighing	-	√	√	-	-
Operator	√	√	√	√	√
Vehicle identification	√	√	√	√	4
Product name					
Totaliser for Intake / Outtake	1	2	2	-	-
Customer Name					
Customer address	1	2	2	-	-
Hauler name					
Hauler address	1	2	2	-	-
Destination					
Description destination	1	2	2	-	-
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 PR1750 for OEM's

### X5 PowerTools (Option)

#### FlashIt

for download of programs

#### LayouItt

driver for NiceLabelExpress

#### DisplayIt

let your PC take control of your TRUCK-X5

#### TranslatIt

for simple editing of language tables

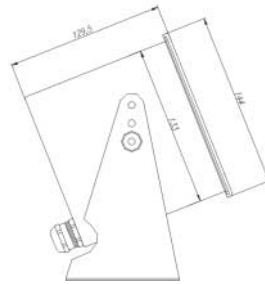
#### RecoverIt

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<sub>AC</sub> 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
PR 5610/10	TRUCK-X5 230 V	9405 156 10101
PR 5610/11	TRUCK-X5 24 V <sub>AC/DC</sub>	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	

			SLOT	1	2	3	4
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 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

Specifications subject to change  
without notice.

Printed in Germany.

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### 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)  $\hat{=}$  0.11  $\mu$ V/d  
Usable stepwidth 0.4  $\mu$ V/d

### Accuracy

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

### Load cell input

6- or 4-wire  
Load cell supply: 12 V  
Impedance: min. 75  $\Omega$ ,  
e.g. 8 load cells with 650  $\Omega$   
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  $T_{K_0}$ : < 0.1  $\mu$ V / K RTI  
Span  $T_{K_{sp}}$ : < 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

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