IBC-X5

System Controller

- Weighing and control unit for automatic charge and discharge processes
- Compact unit with integrated PLC and operator interface
- 4 pre-defined charge and discharge processes
- User friendly material and container data base
- Communication via serial interface, fieldbus or Ethernet

The IBC-X5 is a flexible control unit for the direct control of automatic charge and discharge processes for IBCs (Intermediate Bulk Containers) with powders or granulated material.

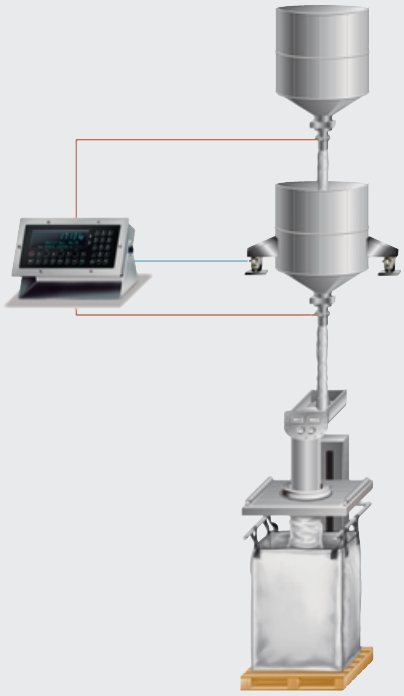
Operator interface, batch control unit and PLC are integrated in a single compact unit. The Controller is ideal for all processes where charging or discharging of IBCs like Big Bags or Tote bins is required. It contains a user-friendly operator interface and a powerful programmable logic controller (PLC).
Four pre-defined operation modes allow direct use without any programming.

Benefits
- Integrated direct control of valves or feeders
- User-friendly container data base with integrated tare-table
- Direct start with setpoint entry or via container selection
- Integrated material and consumption reports

Operation
The heart of the IBC-X5 is it's high-precision instrumentation amplifier and A/D-converter. Integrated batch controller with a powerful batch algorithm for fast and precise batching and optimised coarse/fine feeding with automatic tolerance control.

Integrated high-performance PLC programmable according to IEC 61131 for fast and easy adaptation of virtually all process requirements. Smart Calibration feature for easy calibration even without the use of weight stones.

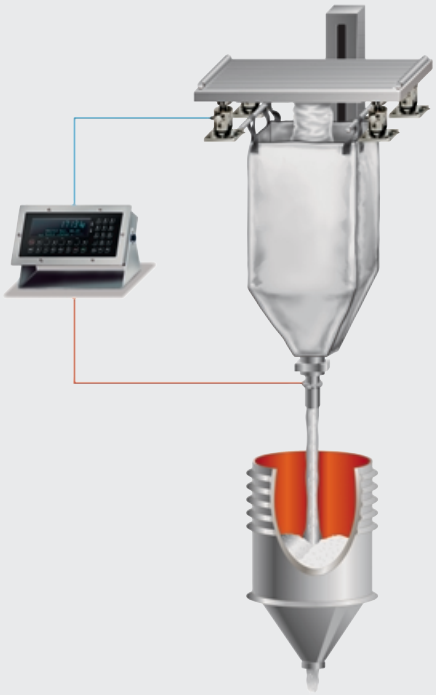
X5 PowerTools (Option)
- FlashIt for download of programs
- LayoutIt driver for NiceLabelExpress for designing and printing of labels
- DisplayIt gets your IBC-X5 on the screen of your PC
- TranslateIt for editing of language tables
- RecoverIt saves the complete configuration data on your PC
- AccessIt for working with databases of the controllers and loading into the PC



Charging of IBCs using a dedicated weigh hopper („Charge batchhopper“)
The IBC-X5 controls the complete charge operation of a weigh hopper to the desired setpoint and discharges the contents of the weighhopper into the IBC. The discharge process can be done fully-automatic or it can be configured to wait for operator action.
The process is started either by input of a setpoint or by selection of an IBC from the internal IBC data base. If an IBC was selected the setpoint is automatically taken from the data base.

The internal logic control not only controls the valves and feeders but can also check for an "IBC in place" signal before discharging. This allows the complete automation of a fully-automatic IBC charger station.
Using a dedicated weigh hopper is the most efficient way to charge IBCs as the IBC can be changed during an active batch into the weigh hopper thus saving time for continuous high performance operation.

Direct charge of IBCs placed on a scale („Loading station“)
The IBC-X5 controls the complete operation of a charge process of IBCs placed on a scale or suspended in a weigh frame. It includes direct control of valves and feeder to charge the IBC to the desired setpoint.
The process is started either by input of a setpoint or by selection of an IBC from the internal IBC data base. If an IBC was selected the setpoint is automatically taken from the data base.
Entry of tare values for different IBCs allows top up IBCs that are not completely empty. They can be charged to the original setpoint if required
Integrated material flow control checks that sufficient material gets into the IBC during the charge process. If the flow of material falls below the entered flow rate an alarm output is set. This alarm output can also be used to initiate flow aids to start.

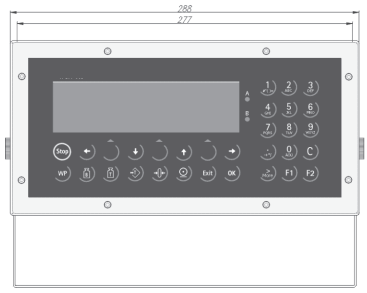


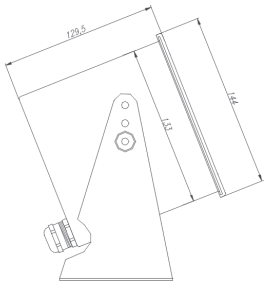
Direct discharge from a storage weigh hopper into IBCs („Filling station“)
The IBC-X5 controls the complete discharge operation from the storage weigh hopper into the IBC. It not only controls valves and feeders for the charge operation of the IBC but also allows for top-up or emptying of the storage weigh hopper.
The process is started either by input of a setpoint or by selection of an IBC from the internal IBC data base. If an IBC was selected the setpoint is automatically taken from the data base. Also a sequence of several charge processes can be started. The controller checks before every start that sufficient material is in the storage weigh hopper and prevents the start of a charge process if not enough material is available.

The storage weigh hopper can be topped-up manually or using an automatic charge process. The controller checks, whether any discharge processes are active before accepting top-up commands.
The controller also supports the emptying of the storage weigh hopper completely to allow material change or for maintenance purposes.

Direct discharge operation from an IBC into the following process („Big bag discharge“)
The IBC-X5 controls the complete discharge operation from the IBC the is placed on a scale or suspended in a weigh frame. It not only controls valves and feeders but also allows for operator prompts to change the IBC when empty.
The process is started either by input of a setpoint or by selection of an IBC from the internal IBC data base. If an IBC was selected the setpoint is automatically taken from the data base.
The controller also supports the entry of discharge setpoints that are higher than the current amount of material available in the IBC. If the IBC is empty the operator is prompted to interrupt the process and exchange the empty IBC for a full one. After this the original discharge process is continued until the desired setpoint is reached.
Integrated material flow control checks that sufficient material flows out of the IBC. If the flow of material falls below the entered flow rate an alarm output is set. This alarm output can also be used to initiate flow aids to start.

Technical Data IBC-X5





Power supply
115/230 V_{AC} 50-60 Hz or 24 $V_{AC/DC}$
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 5610/30	IBC-X5 230 V	9405 156 10301					
PR 5610/31	IBC-X5 24 $V_{AC/DC}$	9405 156 10311					
PR 5610/32	IBC-X5 Ex-Zone 2/22 (230 V)	9405 156 10321					
PR 5610/33	IBC-X5 Ex-Zone 2/22 (24 V)	9405 156 10331					
Options							
PR 1713/05	RAM Memory Extension 1MB	9405 317 13051					
PR 1799/99	W&M Approval Labels (1 set)	9405 317 99991					
PR 8901/81	Internal Alibi Memory (Licence)	9405 389 01811	add. SW required				
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	o	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: 31 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

Specifications subject to change
without notice.
Printed in Germany.
n/sart • C
9498 756 10301
Version 06.2004

Interface
Bi-directional serial interface RS 232;
user selectable protocols: EW Com, remote string, printer, XON, Jbus, ModBus, Dust 3964R, XBPI

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: 12V
Impedance: min. 75 Ohm,
e.g. 8 load cells @650 Ohm

Measuring principle
Ratiometric integrating A/D converter
Conversion time: 50 ms
Update: 100 ms to 2 s,
adjustable in 100 ms steps

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

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

Sartorius Hamburg GmbH
Meiendorfer Straße 205
22145 Hamburg, Germany
Tel. +49.40.67960.303
Fax +49.40.67960.383
www.sartorius.com