![sartorius mechatronics logo]

IBC–X4
Process Controller

- Weighing and control unit for automatic charge and discharge processes
- EC Type Approval as indicator for non-automatic scales class III, 6000 e
- 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–X4 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–X4 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.

PowerTools (Option)
The PowerTools are a collection of powerful programs to speed-up commissioning:
- FlashIt for download of programs
- LayoutIt driver for NiceLabelExpress for designing and printing of labels
- DisplayIt gets your IBC-X4 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
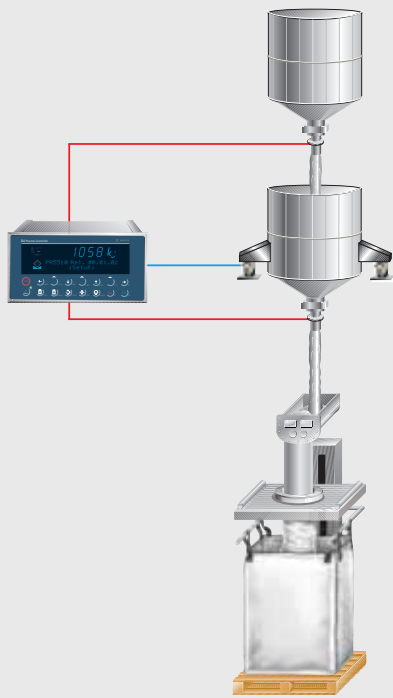
Charging of IBCs using a dedicated weigh hopper („Charge batchhopper")
The IBC-X4 controls the complete charge operation of a weigh hopper to the desired setpoint and discharges the contents of the weighhopper into the IBC. The discharge process can be done fully-automatic or it can be configured to 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-X4 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.
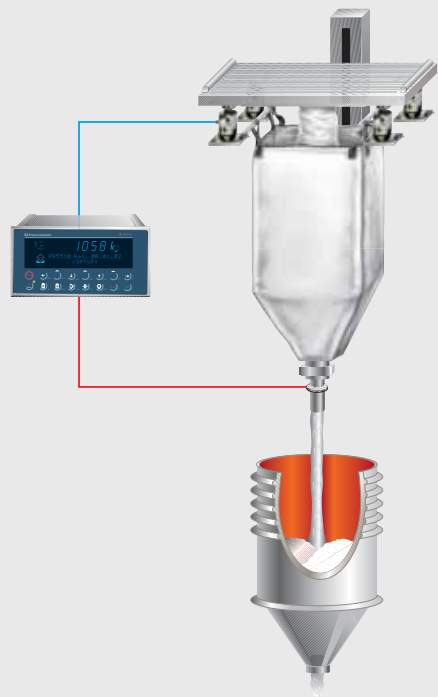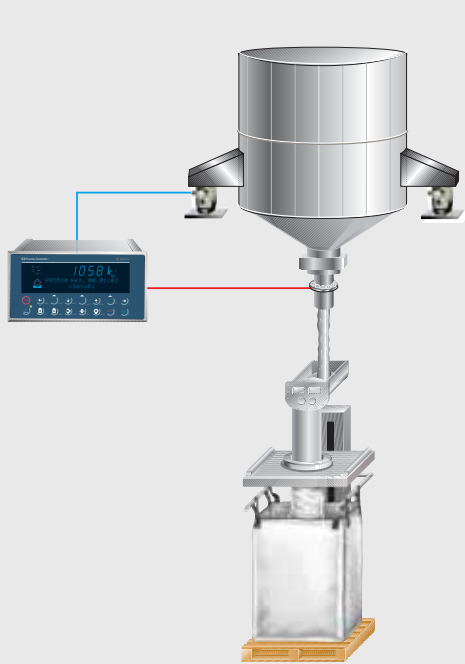
Direct discharge from a storage weigh hopper into IBCs („Filling station")
The IBC-X4 controls the complete discharge operation from the storage weigh hopper into the IBC. It not only controls valves and feeders for the charge operation of the IBC but also allows for top-up or emptying of the storage 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")
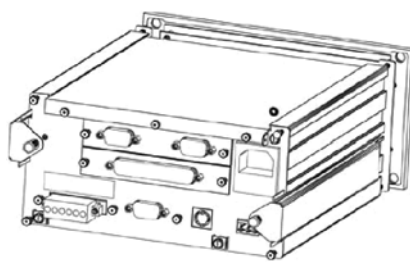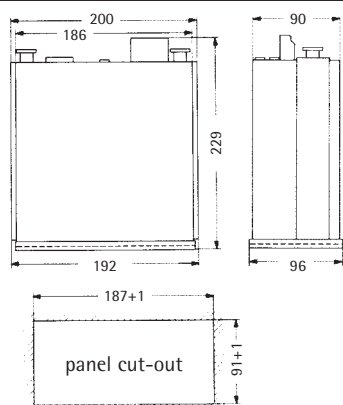The IBC-X4 controls the complete discharge operation from the IBC. The IBC is placed on a scale or suspended in a weigh frame. It not only controls valves and feeders but also allows for operator prompts to change the IBC when empty.

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–X4

200
186
90
229
192
96

187+1

panel cut-out

91+1

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

Load cell input
6-or 4-wire
Load cell supply: 12 V_{DC}
Impedance: min. 75 Ω,
e.g. 12 load cells with 1,080 Ω

Interface
– Built-in bidirectional serial interface
  RS232; user selectable protocols:
  remote display, printer
– Keyboard interface PS2

Accuracy
6000 e OIML R 76
min. verification interval 0.5 µV/e

Linearity
<0.002%

Resolution
4.8 Mio counts
usable stepwith 0.2 µV/d

Measuring time
10…1,280 ms, adjustable

Filter
4-pole digital filter 0.1 to 5 Hz

Input signal range
0…36 mV
Dead load suppression: 100%

Temperature influence
Zero: <0.05 µV/K RTI
Span: <+/-4 ppm/K

Environmental conditions

Temperature range
Operation: -10°C to +55°C
Storage: -40°C to +70°C

Electrical safety
according to IEC 61010-1

Vibration
according to IEC 60068-2-6

Conformity
NAMUR, CE

Weight
net: 2.12 kg
gross: 4 kg

Power supply
115–230 V_{AC} 50–60 Hz +10%/-15%
10 W/17 VA (without options)
24 V Version on request

Housing
Material: Aluminium
Protection class: IP30
Front panel: IP65

Order information

Type	Description	Order number	SLOT	1	2	3	4
PR 5510/30	IBC-X4 230 V	9405 155 10301					
Pluggable Options Cards							
PR 5510/04	Serial Interface card (RS232│485)	9405 355 10041		o	o		
PR 5510/06	1 analogue Output 0│4 –20 mA*	9405 355 10061				o	
PR 5510/07	1 analogue Output│4 analogue Input*	9405 355 10071		o	o		
PR 5510/08	BCD open emitter	9405 355 10081		o	o		
PR 5510/09	BCD open collector	9405 355 10091		o	o		
PR 5510/12	Digital 6 In-│12 Output, Opto│Opto	9405 355 10121		x	o		
PR 5510/14	Ethernet, 10 MBaud│Modbus TCP	9405 355 10141					o
PR 1721/31	Profibus DP	9405 317 21311					o
PR 1721/32	Interbus S	9405 317 21321					o
PR 1721/34	DeviceNet	9405 317 21341					o
PR 1721/35	CC-Link	9405 317 21351					o
PR 1721/36	Profinet	9405 317 21361					o
PR 1721/37	Ethernet│IP	9405 317 21371					o
Further Options							
PR 1792/13	OPC Server Licence	9405 317 92131					
PR 1792/20	AccessIt Licence	9405 317 92201					
PR 8001/01	X-Family PowerTools	9405 380 01011					
PR 8901/81	Internal Alibi-Memory (Licence)	9405 389 01811					
PR 1623/10	Connecting Cable (4 m)	9405 316 23101					
PR 1623/20	Relay I│O Module	9405 316 23201					
PR 1623/30	Terminal I│O Module	9405 316 23301					
PR 1620/01	19" Rack mounting kit for 1 unit	9405 316 20011					
PR 1620/02	19" Rack mounting kit for 2 units	9405 316 20021					

o = optional, x = included in delivery
The documentation will be delivered on a CD, a paper version can be ordered separately.
* Pay attention to the total load. Refer to documentation.