

SAT



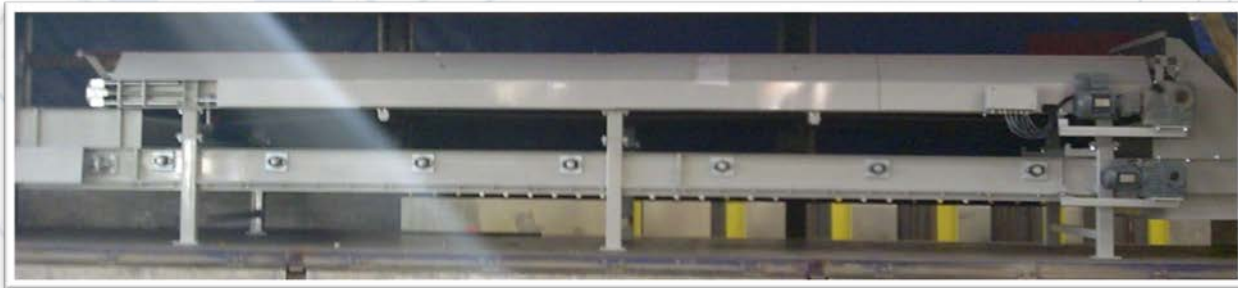
SYSTEMS • AUTOMATION • TECHNOLOGIES



BF 2015 BELT WEIGH FEEDERS

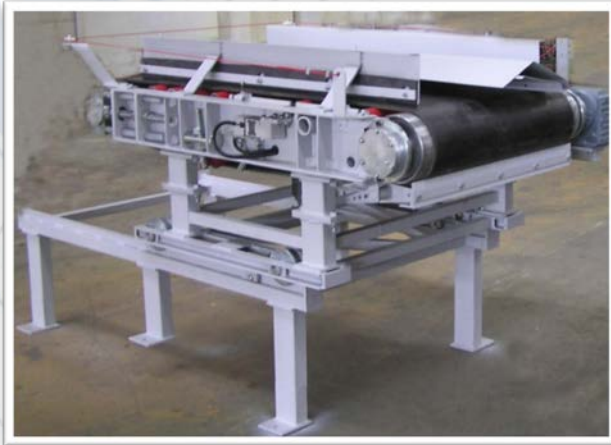
INTRODUCTION

- The BF 2015 belt feeder reveals new horizons for plant automation
 - Reliable and durable mechanics
 - All types of industries
 - Easy access for maintenance and service
 - Standalone or integrated to a central control system
 - Based on industry standard components such as Siemens, Schneider and SEW



APPLICATION

- The BF 2015 feeds bulk materials and can be used in many industries, such as, mining, glass, metallurgy, chemistry, food, etc.
- Delivers desired stable controlled weighed flow rate compensating unstable material conditions – relative weight change, moisture content, momentary fluctuations of material bed on the belt, etc.



FUNCTIONS

- Precise weighing, belt speed measurement and control guarantee excellent continuous material flow
- Mechanical auto-centering and belt stretching compensation
- Total material measurement
- Local and remote control
- Automated tare and calibration
- Alarm signaling
- Industrial network communication (PROFIBUS-DP or other) for plant-wide system integration, mixture recipes, archiving and reports



ADVANTAGES

- Accuracy and reliability
- Low maintenance, easy belt change
- Material bed shaping by adjustable steel curtain
- Measuring roller placed directly on two load cells
- Stable feeding results over the long term
- Safe belt run monitoring and tracking
- Plough scraper
- Static belt tension through take-up screws integrated in frame
- Wide feed rate adjustment range
- Standard parts used – no specialized electronics

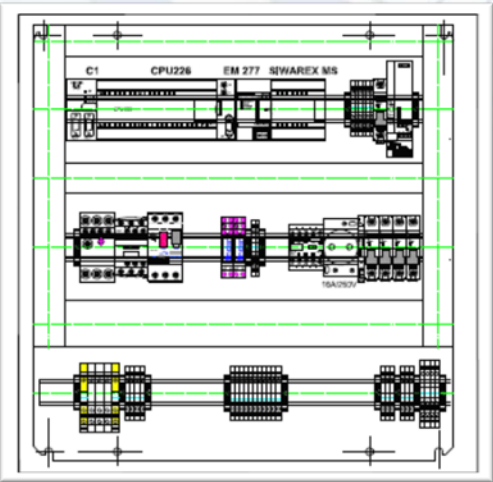
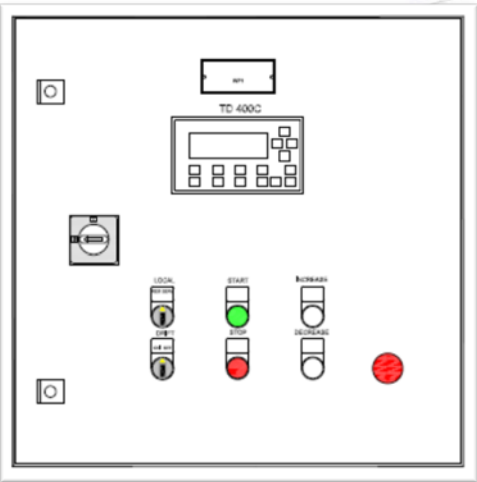


TECHNICAL DATA

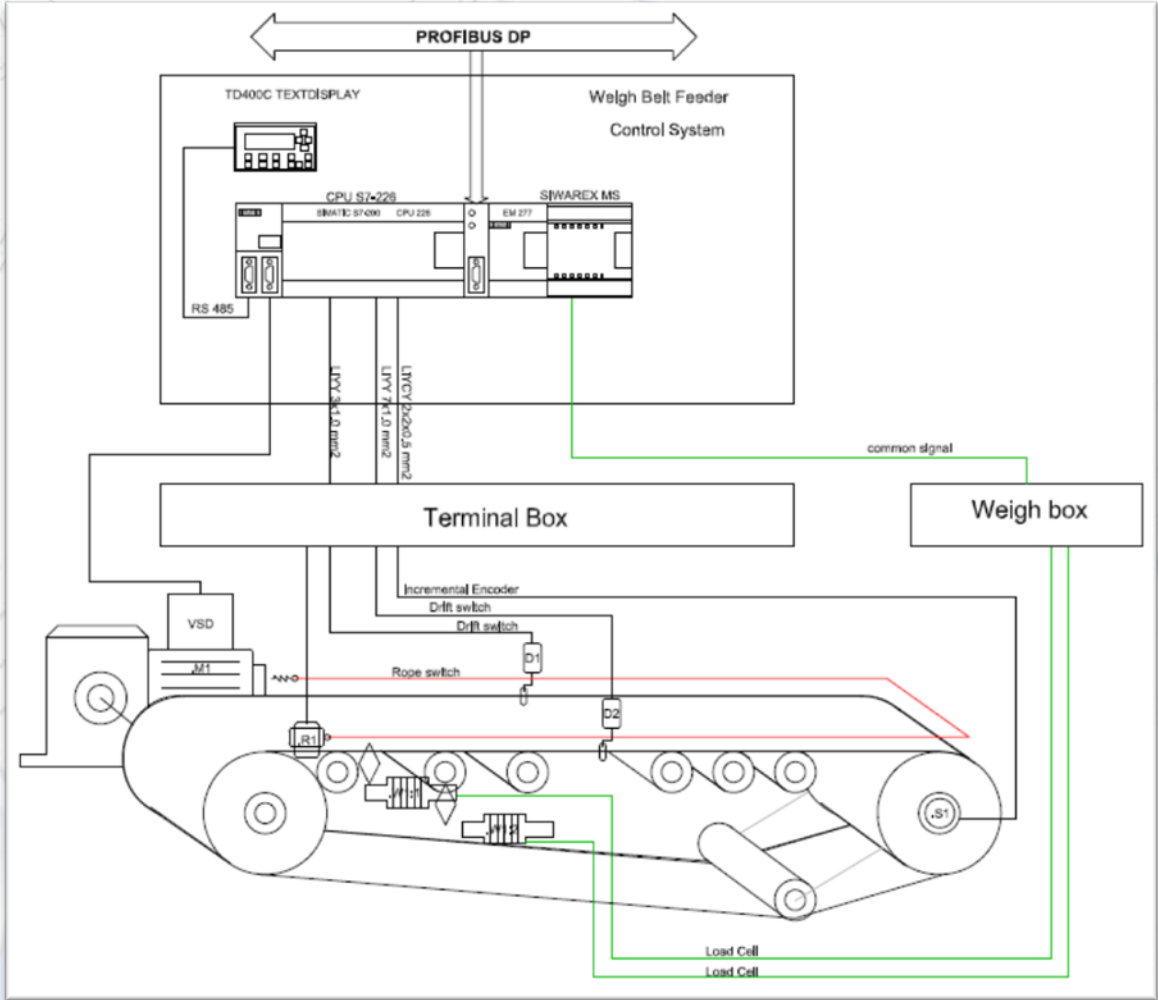
	Min	Max	Unit
Capacity	0.5	500	t/h
Belt width	400	2000	mm
Motor speed control range	10	100	%
Measuring section nominal weight	5	500	kg
Weighing error	0.02	0.05	%
Flow control error	0.25	0.5	%
Total measurement error	0.25	0.5	%
Weight overload	-	300	%
Material working temperature	0	150	%
Feeder length (from axis to axis)	1200	8000	mm
Protection: sensors	IP 65, IP 67		
Protection: control cabinet	IP 55		

CONTROL SYSTEM

Layout



Block diagram



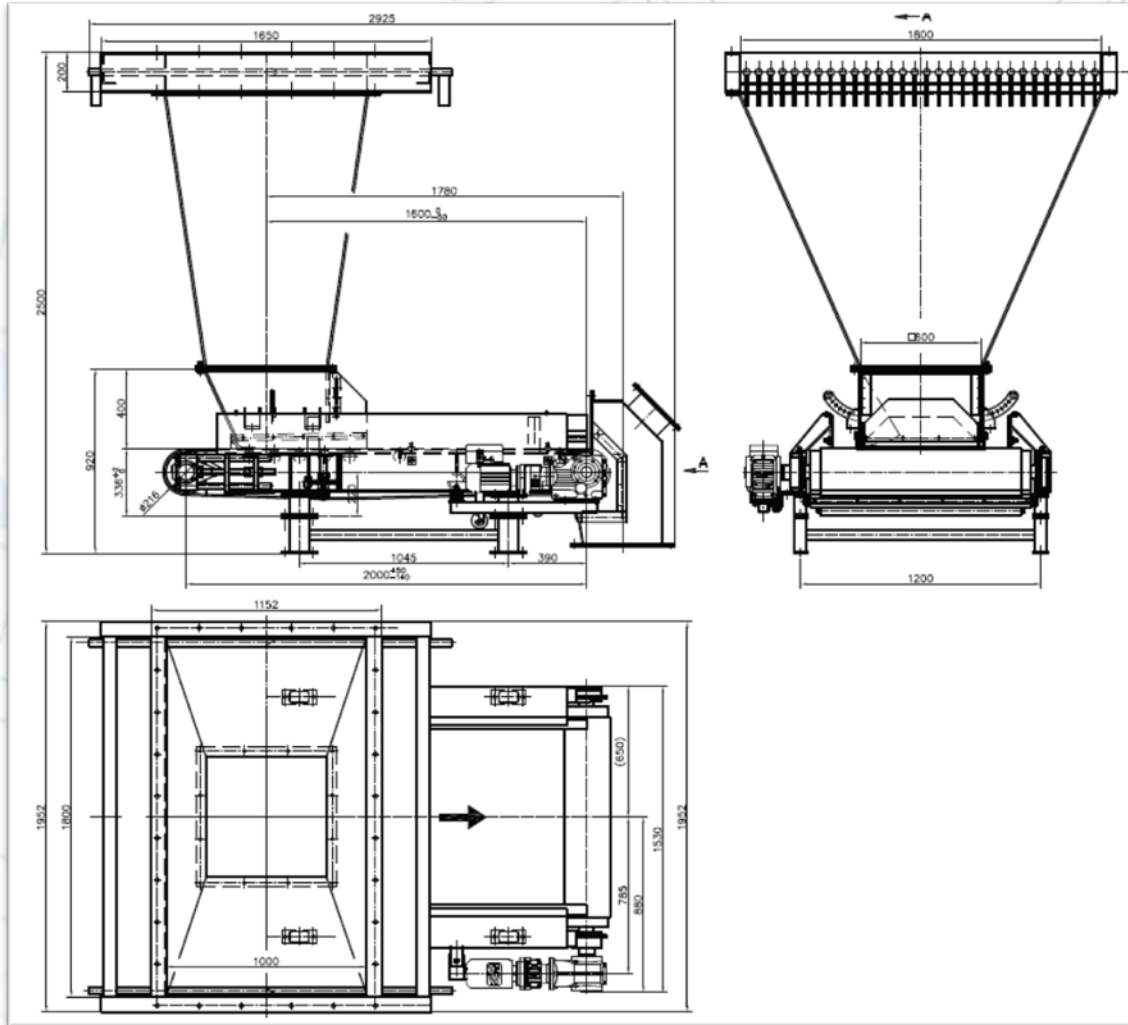
CUSTOMIZATION

- SAT Ltd. designs and manufactures weigh feeders with customer required parameters, such as: capacity, geometry, EX-environment, etc.
- Optional: inlet hopper, discharge hood, needle/sliding gate, spillage conveyor, bin weigh cells, vibrators, de-dusting
- Complete bin-feeder systems, all of the above included, in a complete turn-key solution



TYPICAL CONSTRUCTIONS

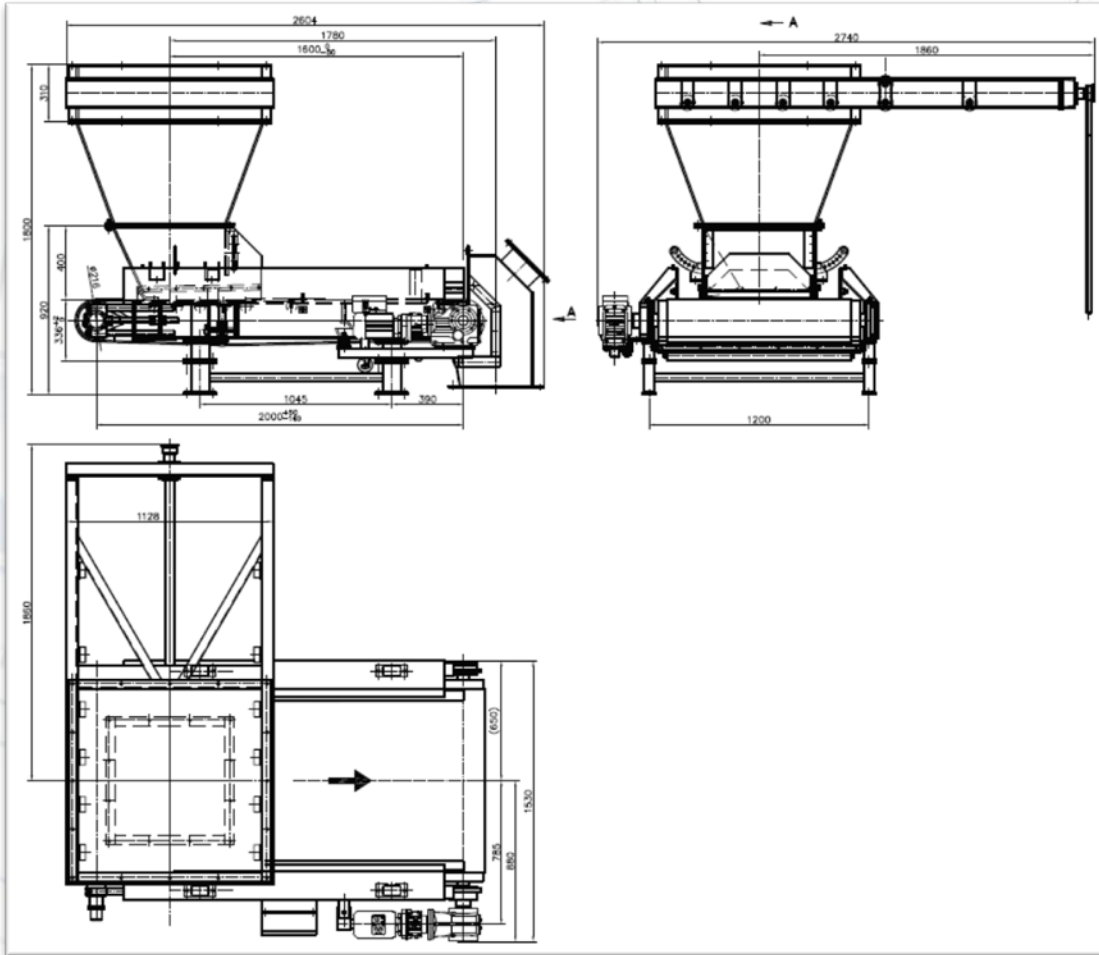
Version 1 - with needle gate, inlet hopper and discharge hood



Example datasheet	Belt weigh feeder
Mill type	Cement mill
Material	Limestone
Bulk density	1,2...1,5 t/m ³
Particle size	max 50 mm
Material temperature	80 °C
Capacity	5...50 t/h
Belt type	1000EP-315/3 4+2-Z
Drive type	KA67R37DT80K4 MM07
Ratio I	279
Nominal power	0.75 kW

TYPICAL CONSTRUCTIONS

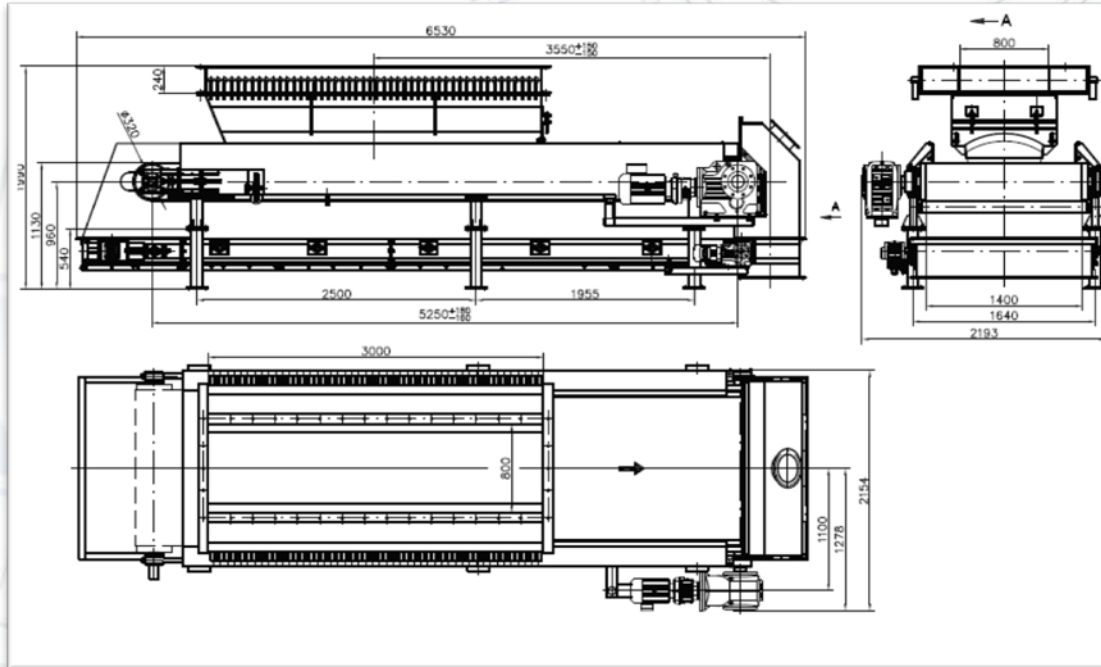
Version 2 - with slide gate, inlet hopper and discharge hood



Example datasheet	Belt weigh feeder
Mill type	Cement mill
Material	Slag
Bulk density	1,2...1,5 t/m ³
Particle size	max 50 mm
Material temperature	80 °C
Capacity	5...50 t/h
Belt type	1000EP-315/3 4+2-Z
Drive type	KA67R37DT80K4 MM07
Ratio I	279
Nominal power	0.75 kW

TYPICAL CONSTRUCTIONS

Version 3 - with needle gate, inlet hopper, discharge hood and spillage conveyor



Example datasheet Belt weigh feeder

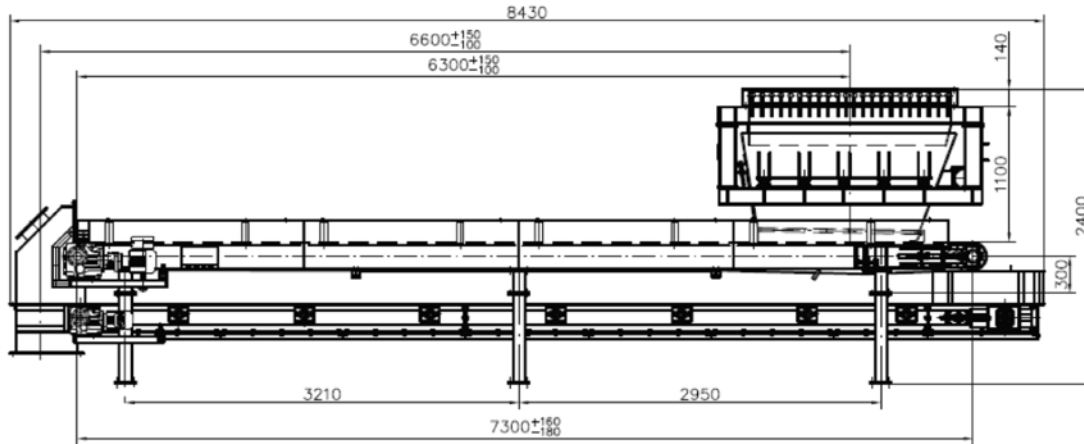
Mill type	Raw mill
Material	Limestone
Bulk density	1,2...1,5 t/m ³
Particle size	max 50 mm
Material temperature	50 °C
Capacity	3...30 t/h
Belt type	1400EP 400/3 5+2 Z
Drive type	KA107R77 DT90S2
Ratio I	1166
Nominal power	1.5 kW

Example datasheet Spillage conveyor

Mill type	Raw mill
Material	Limestone
Bulk density	1,2...1,5 t/m ³
Particle size	max 50 mm
Material temperature	50 °C
Capacity	Max 2 t/h
Belt type	1400EP 400/3 5+2 Z
Drive type	KA67 DT80N6
Ratio I	108,03
Nominal power	0.55 kW

TYPICAL CONSTRUCTIONS

Version 4 - with needle gate, inlet hopper with vibrator, discharge hood and spillage conveyor



Example datasheet Belt weigh feeder

Mill type	Cement mill
Material	Ash
Bulk density	1,1 t/m ³
Particle size	max 150 mm
Material temperature	40 °C
Capacity	5...50 t/h
Belt type	1200 EP400/3 4+2
Drive type	KA77R37 DT90S4 MM15
Ratio I	328
Nominal power	1.5 kW

Example datasheet Spillage conveyor

Mill type	Cement mill
Material	Ash
Bulk density	1,1 t/m ³
Particle size	max 150 mm
Material temperature	50 °C
Capacity	Max 2 t/h
Chain type	Round steel DIN 764 10x35
Drive type	KA67 DT80N6/TH M1
Ratio I	104,37
Nominal power	0.55 kW

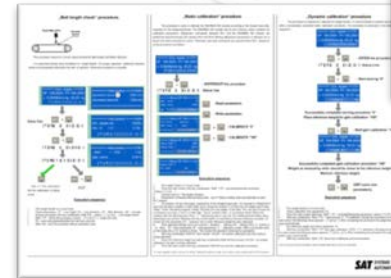
PLC

- The BF 2015 are based on the following PLC platforms
 - S7-200 / S7-1200 – controls single feeder, including bin automation (sensors, vibrators, de-dusting)
 - S7-300 – up to 8 feeders. Supports recipes, group interlocks, complete monitoring. Operator interface: touch panel or PC based operator station. May control simple transport system and de-dusting
 - S7-400 – for complete plant automation, including unlimited number of feeders



SOFTWARE

- BF 2015 comes with a complete set of:
 - System software
 - Manuals, procedures, electrical schematics
 - Standard software for integration to various types of DCS
 - Own standard modules or CEMAT for mining industries
 - Recipe management (for multiple feeder systems)
 - Archiving and alarm logging
 - Production reports



0101FD0220	0101FD0110	0101FD0140	0101FD0120	0101FD0110	0101FD0110	0101FD0080	0101FD0080	0101FD0040
COAL 9	LEAD DUST 8	LEAD PASTE 7	LIME ASH 6	SILICA 5	REF REVERTS LEAD CAKE 4	WABZ CRURR 3	LEAD CONCENTRATE 2	LEAD CONCENTRATE 1
Outotec 0.00 lb	4.0 lb	2.00 lb	8.87 lb	0.300 lb	4.61 lb	1.30 lb	16.0 lb	0.0 lb
PV 0.00 lb	4.0 lb	1.73 lb	0.87 lb	0.299 lb	3.99 lb	1.30 lb	16.0 lb	0.0 lb
Weight 33.4 kg	129.3 kg	85.0 kg	51.1 kg	15.9 kg	88.3 kg	55.5 kg	57.3 kg	0.0 kg
Speed 0.0 m/min	4.3 m/min	2.8 m/min	4.0 m/min	0.8 m/min	5.5 m/min	3.5 m/min	37.8 m/min	0.0 m/min
Bin weight 3.19 t	2.60 t	9.52 t	4.83 t	6.39 t	19.48 t	4.94 t	34.41 t	10.0 t

LIME ASH 6	REF REVERTS LEAD CAKE 4	0101FD0050	LEAD CONCENTR 2	0101FD0160	LEAD DUST 8
0101FD0100	0101FD0150/WF	0101FD0050/WF	0101FD0050/WF	0101FD0160/WF	0101FD0160/WF
SP 4.0 lb	SP 4.0 lb	SP 16.0 lb	SP 16.0 lb	SP 4.0 lb	SP 4.0 lb
PV 4.2 lb	PV 4.2 lb	PV 16.8 lb	PV 16.8 lb	PV 4.2 lb	PV 4.2 lb
17%	28%	32%	32%	131.1 kg	16%

01WT345WT	L Limit 3.00	CG Lead Dust Bin Weight
1558.206'S	Speed monitor	CG 0181CV0020 - Transfer Conveyor No 2
01WT346/WT	H Limit 160.00	CG Lead Dust Weight on Measuring Frame
01WT346/WT	High Level	CG Weight Feeder Spout Level
07:33:34 0101WT346/WT	H Limit 7.00	CG Lead Dust Bin Weight
07:28:29 0101FD0110'S	H Limit 2.31	CG Weight Feeder Speed
0101FD0110'S	CG 0101FD0110'S	0101FD0110'S

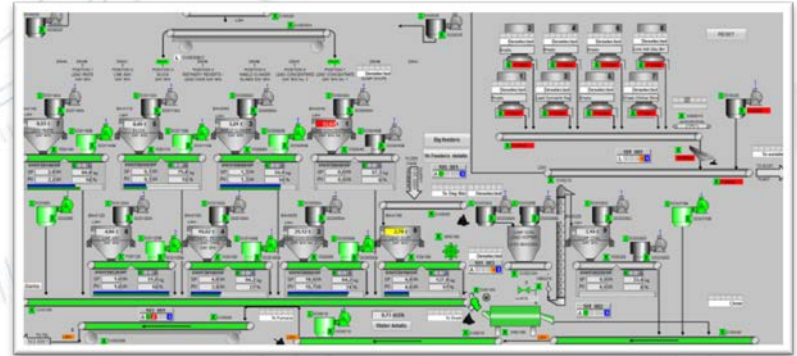
SCOPE OF SUPPLY

	Type	Production
Belt feeder mechanism	Selectable	SAT
Belt type	Selectable (EP400/3 4+2 or others)	Selectable
Motor & gearbox	KA47...KA107 / KAD47..KAD168	SEW Eurodrive / SIEMENS
Speed sensor	Encoder 2500-RTM	SIEMENS
VSD	MOVIMOT-C / Sinamics G120	SEW Eurodrive / SIEMENS
Weight sensors	PC60	FLINTEC
Weight transmitter	Siwarex MS / Siwarex U / TENZO3-UF	SIEMENS / SIEMENS / SAT
Belt position (drift switch)	XCR-T115 / HES 011	SCHNEIDER / KIEPE
Emergency rope (rope switch)	XY2-CH13250 / HEN002	SCHNEIDER / KIEPE
Blocked chute sensor (optional)	Rotary paddle / Vibrating fork / Capacitive	SIEMENS
Control cabinet	Selectable	SAT / RITTAL
Local control panel	Selectable	SIEMENS / Selectable
PLC	Selectable	SIEMENS
System software	TIA Portal / Step 7 / PCS7	SIEMENS

Components may vary depending on required application

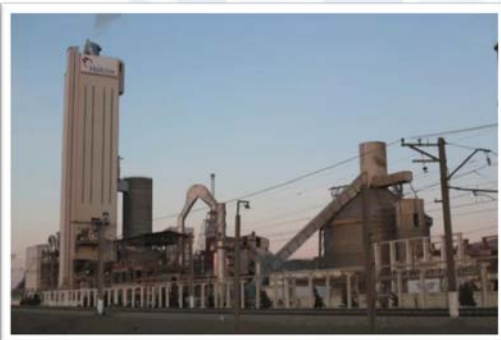
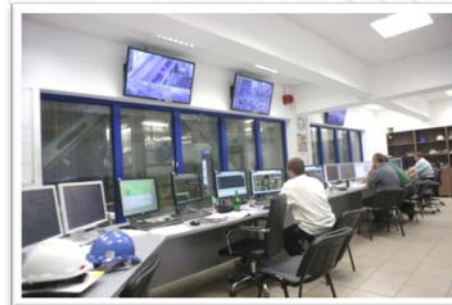
SOLUTIONS

- BF 2015 are offered as:
 - Standalone product with complete documentation, to be installed by customer
 - Full package including installation, commissioning, and personnel training
 - Full package including integration to existing central control systems
 - Part of complete engineering project developed by SAT Ltd.



ADDITIONAL SERVICES BY SAT LTD.

- Engineering, manufacturing and delivery of wide range of automation equipment
- Installation and expert supervision for third party engineering projects
- Consulting
- Testing and commissioning
- Plant personnel training





CONTACT US



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