SPECIFICATION

BELT SCALE

WEIGHING EQUIPNENT

TAG. NO		
SERVICE CONDITION	DESIGN RATE	
	BELT WIDTH	600~1300MM
	BELT SPEED	
	TEMPERATURE (℃)	—
SINGLE IDLER SCALE	ACCURACY	±0.5%
	CONVEYOR INCLINE	±20°FROM HORIZONTAL. FIXED INCLINE UP TO ±30° WITH REDUCED ACCURACY
	NUMBER OF LOAD CELL	2EA
	LOAD CELL EXCITATION	10VDC(NOR.)/15VDC(MAX.)
	LOAD CELL OUTPUT	0 ~ 2mV/V
	MODEL	MSI
CONTROL UNIT	POWER	100~230Vac ±15%, 50/60Hz
	ENCLOSURE	NEMA 4X/IP65
	INPUT	LOAD CELL - 0~45mV SPEED SENSOR - 0~5V(LOW) 0~15V(HIGH)
	OUTPUT	0~20mA or 4~20mA , 2REMOTE TOTALIEER
	MODEL	CONTROL BOX WITH BW500L
SPEED SENSOR	TYPE	ROTARY PROXIMITY
	POWER SUPPLY	DC 12 TO 24V
	PULSE PER SENSOR REVOLUTION	6/REVOLUTION(10 pulses/m),
	DRIVE PULLEY DIAMETER	191mm
	ENCLOSURE	IP67
	OUTPUT	NPN OPEN COLLECTOR
	MODEL	SD-36E / SEOJIN INSTECH
TEST WEIGHT	18LB(QT'Y)	YES
JUNCTION BOX	MAT'L	ADC
	ENCLOSURE	IP67
	MODEL	BXA001/BXA001-1 / SEOJIN INSTECH

REV. NO	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED

(주)서진인스텍
SeoJin Instech Co., Ltd.

NO.	DATE	REVISIONS & DESCRIPTION	SIGNATURE	
			CHECKED	REVIEWED
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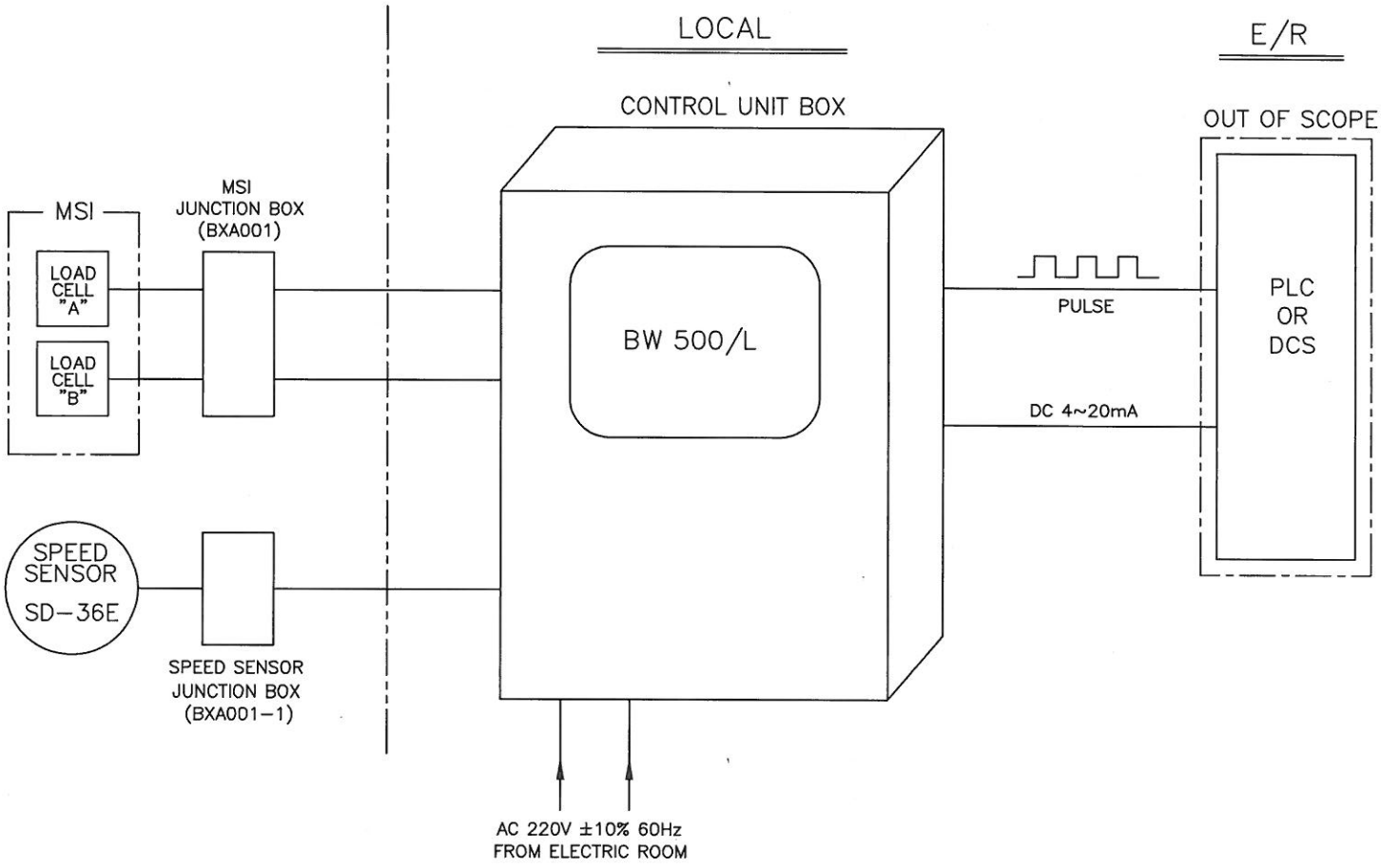

REV.	DESCRIPTION	DATE	DESIGNED	CHECKED	REVIEWED	APPROVED
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CUSTOMER: –

PROJECT: –

TITLE: BELT SCALE SYSTEM

MANUFACTER: SeoJin Instech Co.,Ltd.

SCALE: N/S

ERP CODE: 0000

Work Order No.: –

DWG NO.:

REV.: 0

NO.	DATE	REVISIONS & DESCRIPTION	SIGNATURE	
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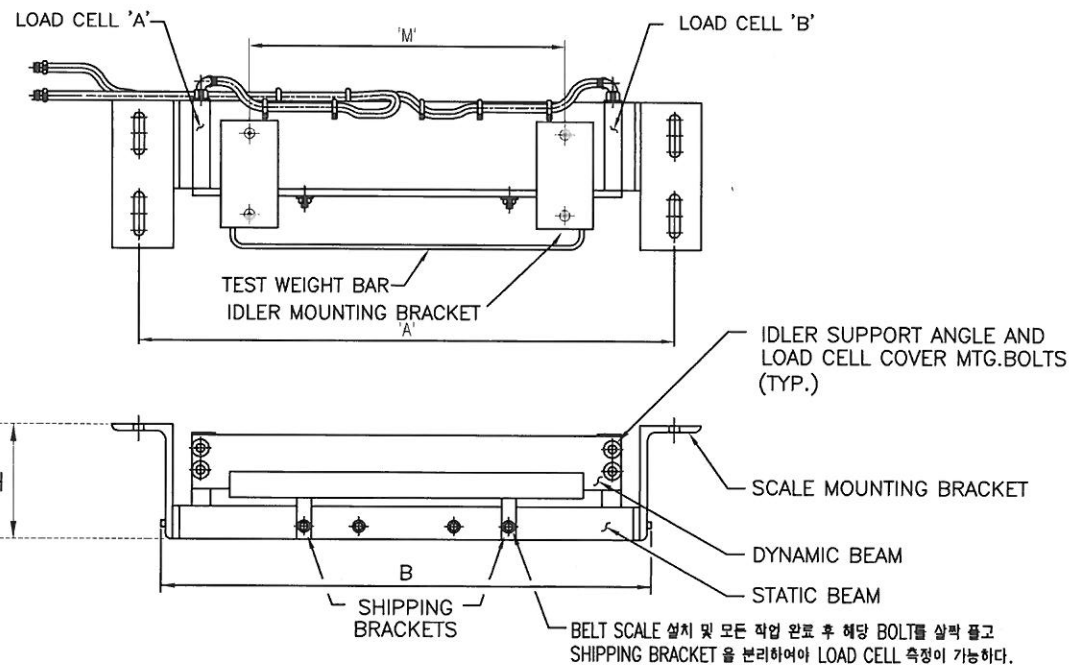

BELT WIDTH (mm)	600 ~ 1300

MODEL	MSI
ACCURACY	±0.5%
MOUNTING	FOUR BOLTS TO CONVEYOR STRINGER
RATED OUTPUT	2mv/v
HYSTERISIS	0.02% OF RATED OUTPUT
NON–LINEARITY	0.02% OF RATED OUTPUT
NON–REPEABILITY	0.01% OF RATED OUTPUT
ENCLOSURE	CAST ALUMINUM,GROUPE,F&E,CLASS II(NAME 9)

NOTE

1. PAINTING : MAKER STANDARD

REV.	DESCRIPTION	DATE	DESIGNED	CHECKED	REVIEWED	APPROVED
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3						
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CUSTOMER	–
PROJECT	–
TITLE	BELT SCALE MSI
MANUFACTER	SeoJin Instech Co.,Ltd.
SCALE	N/S
ERP CODE	0000
Work Order No.	–
DWG NO.	
REV.	0

NO.	DATE	REVISIONS & DESCRIPTION	SIGNATURE	
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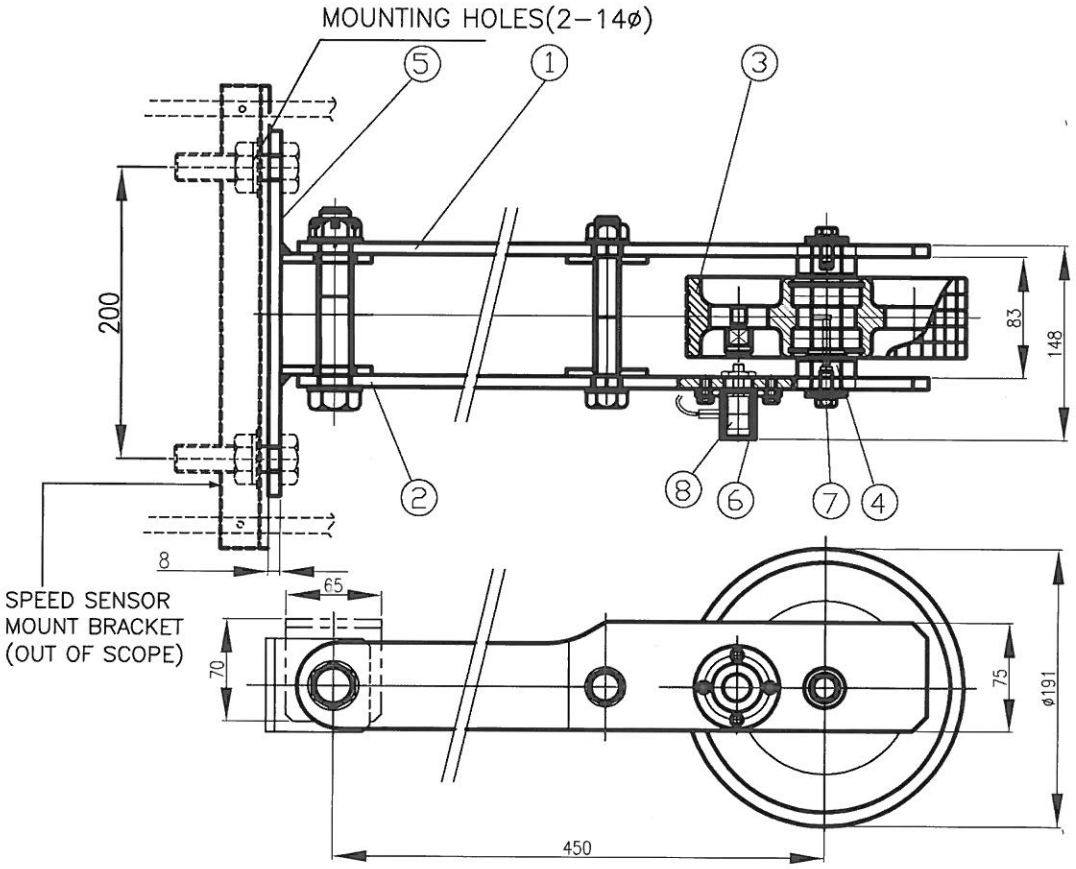

NO.	DESCRIPTION	UNIT	Q'TY
1	BELT SCALE PULSE GENERATOR	EA	1

*SPECIFICATION

CABLE CONNECTOR	1/2"NPT
OUTPUT	6 PULSE per REVOLUTION
OPERATING TEMP'	–25 TO 70°C
POWER	12 to 24VDC (10 to 30VDC)
MODEL	SD–36E

REV.	DESCRIPTION	DATE	DESIGNED	CHECKED	REVIEWED	APPROVED
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CUSTOMER	–
PROJECT	–
TITLE	BELT SCALE SPEED SENSOR
MANUFACTER	SeoJin Instech Co., Ltd.
SCALE	N/S
ERP CODE	0000
Work Order No.	–
DWG NO.	
REV.	0

NO.	DATE	REVISIONS & DESCRIPTION	SIGNATURE	
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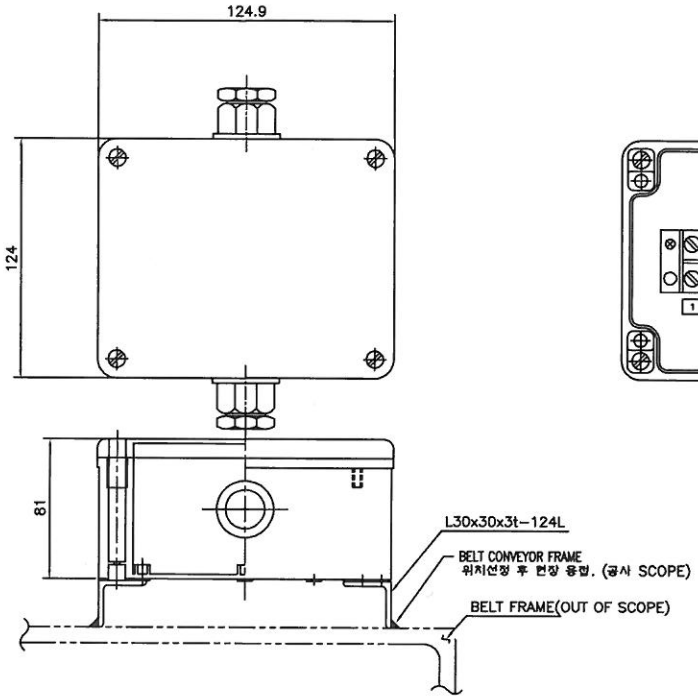
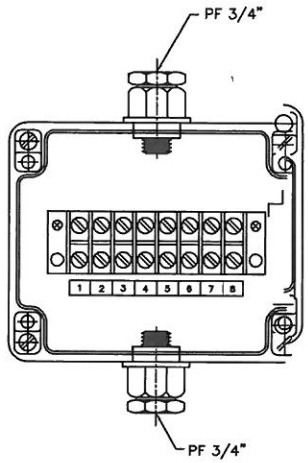
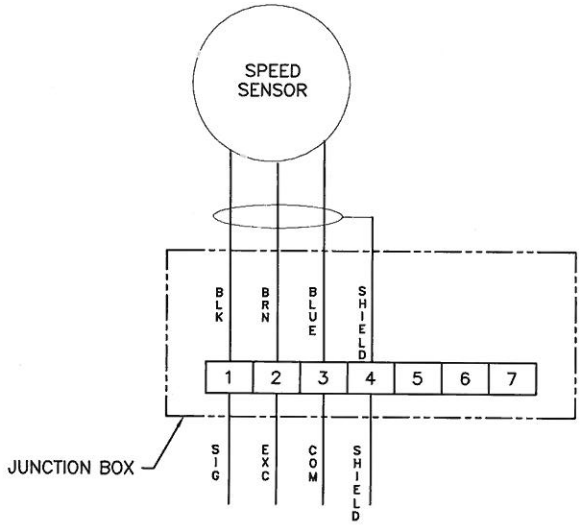




INNER VIEW



NO.	MODEL	DESCRIPTION	UNIT	Q'TY
1	BXA001	BELT SCALE PG JUNCTION BOX	EA	1

NOTE

1. CASE : MAT'L : ADC
   ENCLOSURE : IP 67
   T/B CAP' : 8P 250V 15A
2. PAINTING : MAKER STANDARD

REV.	DESCRIPTION	DATE	DESIGNED	CHECKED	REVIEWED	APPROVED
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CUSTOMER: –

PROJECT: –

TITLE: SPEED SENSOR J/BOX

MANUFACTER: SeoJin Instech Co.,Ltd.

SCALE: N/S

ERP CODE: 0000

Work Order No.: –

DWG NO.:

REV.: 0

NO.	DATE	REVISIONS & DESCRIPTION	SIGNATURE	
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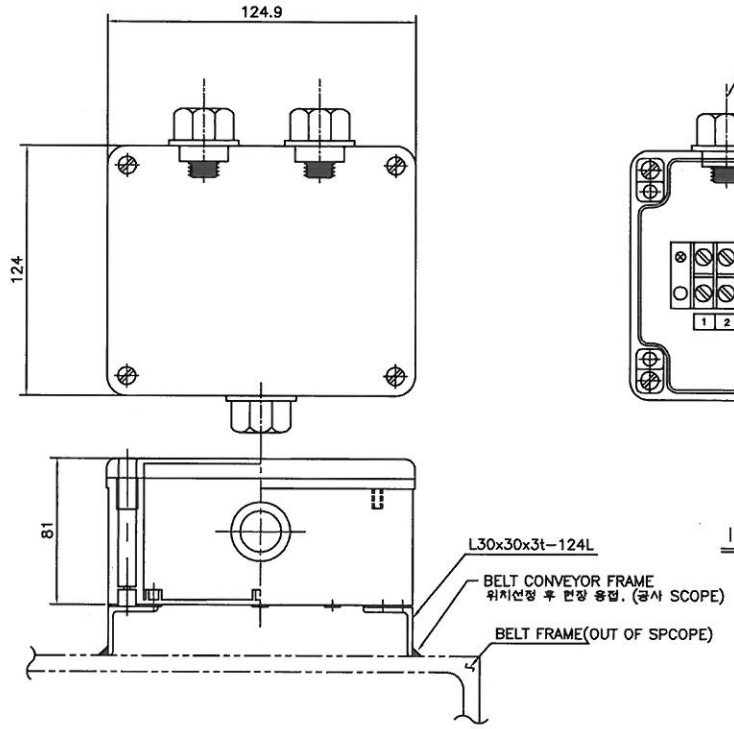
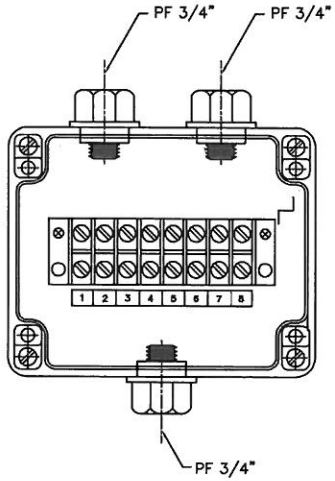
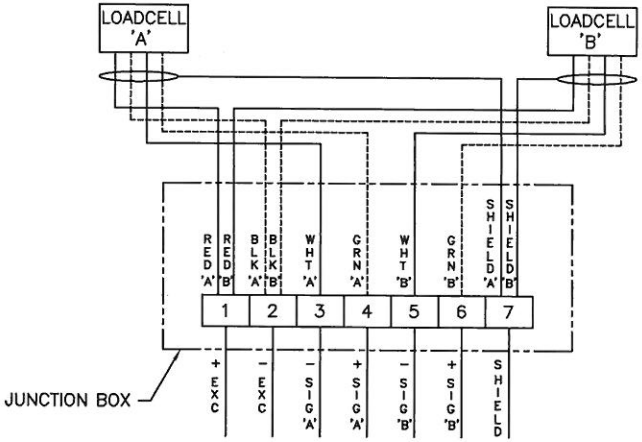




INNER VIEW



NO.	MODEL	DESCRIPTION	UNIT	Q'TY
1	BXA001-1	BELT SCALE MSI JUNCTION BOX	EA	1

NOTE

1. CASE : MAT'L : ADC
   ENCLOSURE : 1P 67
   T/B CAP' : 8P 250V 15A
2. PAINTING : MAKER STANDARD

REV.	DESCRIPTION	DATE	DESIGNED	CHECKED	REVIEWED	APPROVED
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CUSTOMER	–
PROJECT	–
TITLE	MSI J/BOX
MANUFACTER	SeoJin Instech Co.,Ltd.
SCALE	N/S
ERP CODE	0000
Work Order No.	–
DWG NO.	
REV.	0

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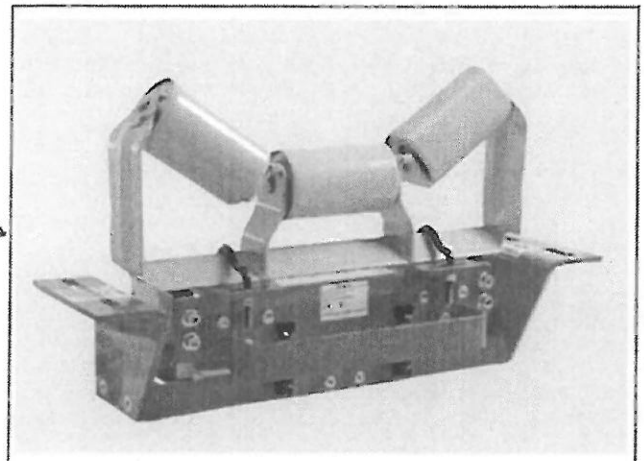
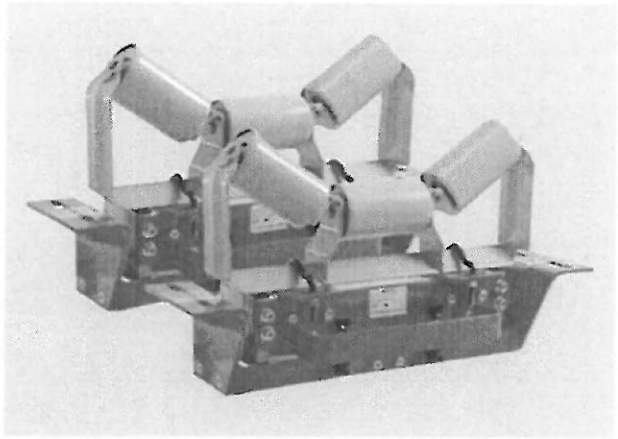
Milltronics Belt Scales

Milltronics MSI and MMI

Overview



Milltronics MSI is a heavy-duty, high accuracy full-frame single idler belt scale used for process and load-out control. Idler not included with belt scale.



Milltronics MMI is a heavy-duty, high accuracy multiple idler belt scale used for critical process and load-out control. Idler not included with belt scale.

Benefits

Milltronics MSI belt scale

- Outstanding accuracy and repeatability
- Unique parallelogram style load cell design
- Fast reaction to product loading, capable of monitoring fast moving belts
- Rugged construction
- SABS approval (South Africa), OIML, MID, and Measurement Canada

Milltronics MMI belt scale

- Exceptional accuracy and repeatability
- Unique parallelogram style load cell design
- Suitable for uneven or light product loading
- Capable of monitoring fast moving belts
- Low cost of ownership
- NTEP, OIML, MID and Measurement Canada approved

Application

Milltronics MSI belt scale

Milltronics MSI belt scale provides continuous in-line weighing on a variety of products in primary and secondary industries. It is proven in a wide range of tough applications from extraction (in mines, quarries and pits), to power generation, iron and steel, food processing and chemicals. The MSI is suitable for monitoring such diverse products as sand, flour, coal, or sugar.

The MSI's proven use of parallelogram-style load cells results in fast reaction to vertical forces, ensuring instant response to product loading. This enables it to provide outstanding accuracy and repeatability even with uneven loading and fast belt speeds.

Operating with Milltronics BW100, BW500, or SIWAREX FTC microprocessor-based integrators, the MSI provides indication of flow rate, totalized weight, belt load, and belt speed of bulk solid materials. A speed sensor monitors conveyor belt speed for input to the integrator.

The MSI is installed in a simple drop-in operation and may be secured with just four bolts. An existing idler is then attached to the MSI dynamic beam. With no moving parts, maintenance is kept to a minimum, with just periodic calibration checks required.

Milltronics MMI belt scale

Milltronics MMI belt scale consists of two or more MSI single idler belt scales installed in series. It provides high accuracy continuous in-line weighing on a variety of products in primary and secondary industries. The MMI system is proven in a wide range of tough applications from extraction to power generation, iron and steel, food processing and chemicals. The MMI is suitable for monitoring such diverse products as fertilizer, sand, grain, flour, coal, or sugar.

The MMI's proven use of parallelogram-style load cells results in fast reaction to vertical forces, ensuring instant response to product loading. This enables it to provide outstanding accuracy and repeatability even with uneven or light loading, short idler spacing and fast belt speeds. Operating with Milltronics BW500 or SIWAREX FTC integrator (for custody transfer applications), the MMI provides indication of flow rate, total weight, belt load and belt speed of bulk solids materials on a belt conveyor. A speed sensor monitors conveyor belt speed for input to the integrator.

The MMI is installed in a simple drop-in operation and may be secured with just eight bolts and existing idler sets, secured to the dynamic beam. With no moving parts, maintenance is kept to a minimum, with just periodic calibration checks required.

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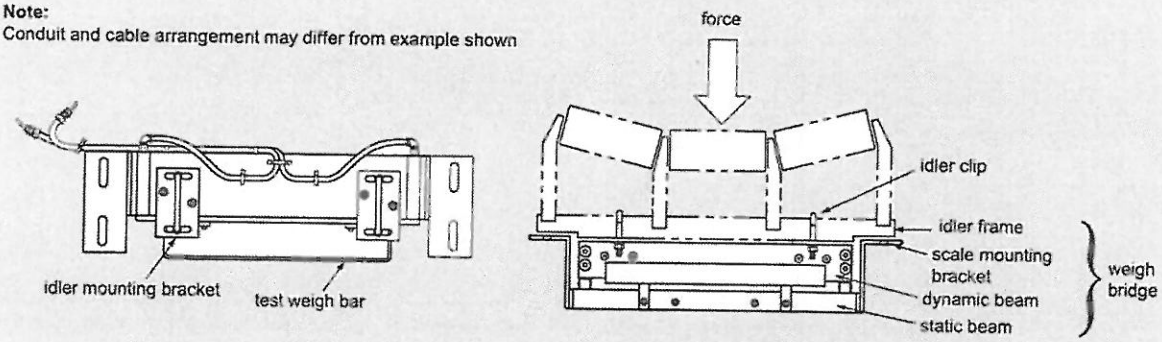
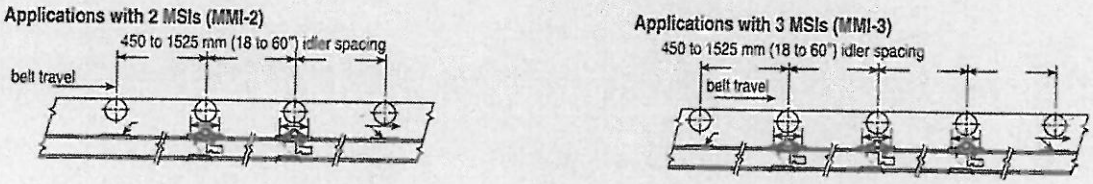
Design

Note:
Conduit and cable arrangement may differ from example shown



MSI/MMI mounting



Mounting (two or more MSI units), dimensions in mm (inch)

APPROVED
2010. 05. 29
Posco ICT

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Milltronics Belt Scales

Milltronics MSI and MMI

Technical specifications

Milltronics MSI and MMI

Mode of operation	
Measuring principle	Strain gauge load cells measuring load on belt conveyor idler(s)
Typical application	
• MSI	Control in fractionated stone blending tunnels
• MMI	Custody transfer
Measurement accuracy	
Accuracy[1]	
• MSI	± 0.5 % or better of totalization over 20 ... 100 % operating range
• MMI-2 (2 idler)	± 0.25 % or better of totalization over 20 ... 100 % operating range
• MMI-3 (3 idler)	± 0.125 % or better of totalization over 25 ... 100 % operating range
Note: available with system specification option D only	
Medium conditions	
Material temperature	-40 ... +75 °C (-40 ... +167 °F)
Belt design	
Belt width	• 18 ... 96 inch in CEMA sizes • Equivalent to 500 ... 2 000 mm in metric size • Refer to dimensions section
Belt speed	Up to 5 m/s (1 000 fpm)[2]
Capacity	Up to 12 000 t/h (13 200 STPH) at maximum belt speed. Please contact a Siemens representative for higher rates.
Conveyor incline	• ± 20 °from horizontal, fixed incline • Up to ± 30 °with reduced accuracy[3]
Idlers	
Idler profile	• Flat to 35° • Up to 45° with reduced accuracy[3]
Idler diameter	50 ... 180 mm (2 ... 7 inch)
Idler spacing	0.5 ... 1.5 m (1.5 ... 5.0 ft)

Load cell	
Construction	17-4 PH (1.4568) stainless steel construction with 304 (1.4301) stainless steel cover.
Degree of protection	IP67, IP65 on hazardous approved models
Cable length	3 m (10 ft) Note: To calculate installation cable length subtract 3 048 mm (120 inch) from the "A" dimension
Excitation	10 V DC nominal, 15 V DC maximum
Output	2 ± 0.002 mV/V excitation (nominal) at rated load cell capacity
Non-linearity and hysteresis	0.02 % of rated output
Non-repeatability	0.01 % of rated output
Capacity	
• Maximum ranges	50, 100, 250, 500, 750, 1 000, 1 250, 1 500 lb
Overload	150 % of rated capacity, ultimate 300 % of rated capacity
Temperature	• -50 ... +75 °C (-58 ... +167 °F) operating range • -40 ... +65 °C (-40 ... +150 °F) compensated • -10 ... +40 °C (14 ... 104 °F) compensated on trade approved versions
Weight	See dimensions drawings see page 4/26
Interconnection wiring (to integrator, per MSI)	< 150 m (500 ft) 18 AWG (0.75 mm²) 6 conductor shielded cable > 150 m ... 300 m (500 ft ... 1 000 ft) 18 ... 22 AWG (0.75 ... 0.34 mm²), 8 conductor shielded cable
Approvals	• CSA/FM Class II, Div. 1, Groups E,F,G and Class III • ATEX II 2D Ex tD A21 IP65 T90 °C • GOST-R Ex • IECEx Ex tD A21 IP65 T90 °C • CE, C-TICK, GOST-R, CMC, RTN
Metrology approvals	Measurement Canada, MID, OIML, SABS[4], NTEP[5]

[1] Accuracy subject to: On factory approved installations the belt scale system's totalized weight will be within the specified accuracy when compared to a known weighed material test sample. The test rate must be within the specified range of the design capacity and held constant for the duration of the test. The minimum material test sample must be equivalent to a sample obtained at the test flow rate for three revolutions of the belt or at least ten minutes running time, whichever is greater.

[2] Contact Siemens application engineering for consideration of higher belt speeds.

[3] Review by Siemens application engineer required.

[4] MSI only

[5] MMI only