

MinebeaMitsumi Inc.

Head Office : 4106-73 Oaza Miyota, Miyota-machi, Tel : 81-267-32-2200
Kitasaku-gun, Nagano, 389-0293 Japan Fax : 81-267-31-1330
<http://www.minebea.co.jp/english/>

Sensing Device Business Unit

Headquarters : 1-1-1 Katase, Fujisawa, Tel : 81-466-22-7151
Kanagawa, 251-8531 Japan Fax : 81-466-22-1701
<http://www.minebea-mcd.com/en/>

SALES OFFICES

■China

< Shanghai >

Minebea Trading (Shanghai) Ltd.

1010, Huaihai Zhong Road, Room 303, K.Wah Centre,
Huangpu District, Shanghai, 200031, China
TEL : 86-21-5405-0707 / FAX : 86-21-5404-7007

< Shenzhen >

Minebea (Shenzhen) Ltd. Luohu Branch

23/F, Tower B, Kingkey 100, No.5016 Shennan Road East,
Luohu District, Shenzhen 518008, China
TEL : 86-755-8266-8846 / FAX : 86-755-8266-8843~8844

< Hong Kong >

Minebea (Hong Kong) Ltd.

Room 2110, 21st Floor, Tower 6, The Gateway,
No.9 Canton Road, Tsim Sha Tsui, Kowloon,
Hong Kong S.A.R of China
TEL : 852-2730-9913/FAX:852-2735-4535

< Taiwan Area >

Minebea Technologies Taiwan Co., Ltd. Taipei Branch

8F, 28 Ching-Cheng Street. Taipei, Taiwan 105, China
(Tong Tai Business Building)
TEL : 886-2-2718-2363 / FAX : 886-2-2718-4092

■Republic of Korea

NMB Korea Co., Ltd.

12F, BS Tower., 29, Hwangsaoul-ro 258beon-gil, Bundang-gu,
Seongnam-si, Gyeonggi-do, 13595, Korea
TEL : 82-2-557-4467 / FAX : 82-2-557-4478

■Singapore

NMB Singapore Ltd.

1, Chai Chee Avenue, Singapore 469059
TEL : 65-6241-1033 / FAX : 65-6444-6527

■Malaysia

Minebea Co., Ltd., Kuala Lumpur Branch

E407, 4th Floor, East Tower Wisma Consplant 1, No. 2, Jalan SS
16/4, 47500 Subang Jaya Selangor Darul Ehsan, Malaysia
TEL : 60-3-5631-7849~52 / FAX : 60-3-5631-7844

■Thailand

NMB-Minebea Thai Ltd., Bangkok Office

19th Floor, Wave Place Building, 55 Wireless Road,
Lumpinee Pathumwan, Bangkok, 10330 Thailand
TEL : 66-2-253-4897 / FAX : 66-2-255-2875 / 66-2-253-4537
URL : <http://www.minebea.co.th/>

■Phillippines

Representative Office of NMB-Minebea Thai Ltd. Manila Office

Unit 908-909 Tower One, Ayala Triangle, Ayala Avenue,
Makati City, Metro Manila, 1226 Phillippines

■Vietnam

Representative Office of NMB-Minebea Thai Ltd. in Hanoi

Room No.903, 9th Floor, Sun Red River Building, No.23 Phan
Chu Trinh Hoan Kiem district, Hanoi, Vietnam

■India

NMB-Minebea Thai Ltd.Chennai Office

Level-2 Regus, ALTIUS Block, Olympia Technology Park
No.01, SIDCO Industrial Estate Guindy, Chennai 600032, India
TEL : 91-44-4299-4215 / FAX : 91-44-4299-4300

Minebea Intec General Catalog

Stainless Steel Industrial Load Cells / Platform Scales
Checkweighers / Metal Detectors / X-Ray Inspections



New Brand

The True measure

Minebea Intec, formerly known as Sartorius Intec, provides products, solutions and services to the food industry for increasing the reliability, safety and efficiency of production and packaging lines. We give evidence of this through our promise to our customers and consumers: 'We make daily life safer.'

Our core market position, that of a leading global product and solution provider, together with our aim to set strong standards in all areas of our business, are both reflected in our company motto: 'The true measure'.

We have almost 70 years experience in supporting the industry to ensure that manufactured goods have the right quality and do not contain any foreign bodies. Our ability to do this is based on the 'German Quality' of our products and services combined with our continuous investment in developing leading technology. As a result, tens of thousands of customers put their trust in our company, having allowed us to supply them with millions of products and solutions during our long history.

Via our world-wide presence, we stand beside our customers around the globe and through the whole life cycle of our products and solutions: from assistance with selecting the right equipment, design-in support, installation & calibration and maintenance & repair services up to realising equipment upgrades and refurbishments and providing user trainings.



Hamburg HQ/Plant



Bovenden Plant



Aachen Plant

Minebea Intec Global Network



Load Cells



Company Overview	2
Load Cell Specifications List	4 ~ 5
Product Features (Load Cells)	6 ~ 9
Contego® - Hygienic Weighing Module	11
Novergo - Hygienic Weighing Module	12 ~ 13
PR6202 Series - Compression Type	14 ~ 15
PR6203 Series (500 kg ~ 75 t) - Compression Type	16 ~ 19
PR6201 Series (100 t, 200 t, 300 t, 520 t) - Compression Type	20 ~ 22
PR6241 Series - S-Shaped Compression Type	23
PR6211 Series - Small Compression Type	24
PR6246 Series - Tension Type	25
PR6207 Series - Beam Type	26
PR6221 Truck Scale	27
PR6224 Pendeco® Truck	28
PR6204 Pendeco® Process	29

Load Cell Applications



PR1626 Intrinsically Safe Explosion-Proof System	30 ~ 31
Weight Controller Maxxis 5	32
Weight Controller Maxxis 4	34
PR5410 Process Indicator	36
PR5230/PR5220 Transmitter	37
PR5110 / PR6130	38

Load Cell Technical Materials

Load Cell Principles	39 ~ 41
----------------------	---------

Industrial Scales



IF/IFX (Intrinsically Safe Explosion-Proof) Series	43 ~ 46
CAAPS/CAPXS (Intrinsically Safe Explosion-Proof) Series	47 ~ 49
IS Series	50
Signum Series	51 ~ 52

Industrial Scale Applications



CAIS / CAISL 1 · 2 · 3	53
CAIXS2 (Intrinsically Safe Explosion-Proof)	54 ~ 55
YDI05-Z / YPSC01-X / YPSC01-Z / YDP20-OCE	56
Signum-Ex / IS-X	57

Checkweighers / Metal Detectors / X-Ray Inspection Systems



Checkweigher Flexus / Synus Series	59
Metal Detector Vistus / Secus Series	60
X-Ray Inspection System Dymond Series / Dylight	61

Load Cell Specifications List

Digital Load Cell Pendeo® Process

Type No.	Accuracy Class (%)	Rated Capacity (Top: kN / Bottom: tf)				
		19.16	49.03	98.07	245.2	490.3
		2	5	10	25	50
PR6204 ..C3	0.015	★	★	★	★	★
PR6204 ..C6	0.008				★	★

Digital Load Cell Pendeo® Truck

Type No.	Accuracy Class (%)	Rated Capacity (Top: kN / Bottom: tf)	
		245.2	490.3
		25	50
PR6224 ..C3	0.015	★	★
PR6224 ..C6	0.008	★	★

★ Rated output: 200,000 digits ★ Rated output: 400,000 digits

Load Cell Selection Chart

Type	Type No.	Accuracy Class (%)	Rated Capacity (Top: N / Bottom: kgf)							
			49.03	98.07	196.1	294.2	490.3	980.7	1.961K	2.942K
			5	10	20	30	50	100	200	300
Compression	PR6203..D1 (E)	0.04								
	PR6203..C3 (E)	0.015								
	PR6203..C6 (E)	0.008								
	PR6211..D1	0.05				●	●	●	●	●
	PR6212..C1	0.05								
	PR6212..LT (High Temperature Type)	0.25								
	PR6241..C6	0.008							●	●
	PR6241..C3	0.015							●	●
	PR6241..D1	0.04						●	●	●
Tension	PR6246..C6	0.008							●	●
	PR6246..C3	0.015							●	●
	PR6246..D1	0.04						●	●	●
Beam	PR6207..C3	0.017		●	●		●	●	●	

■ Rated output: 1 mV/V ● Rated output: 2 mV/V (1 mV/V also selectable)

Hygienic Weighing Module Contego®

Type No.	Accuracy Class (%)	Rated Capacity (Top: N / Bottom: kgf)					
		980.7	1.961K	2.942K	4.903K	9.807K	19.61K
		100	200	300	500	1000	2000
PR6041/ ..S D1	0.04	●	●	●	●	●	●
PR6041/ ..S C3	0.015		●	●	●	●	●

Cable outlet direction 60S: horizontal, 70S: vertical

Hygienic Load Cell PR6202 Compression Type

Type No.	Accuracy Class (%)	Rated Capacity (Top: kN / Bottom: tf)						
		9.807	19.61	39.22	58.83	98.07	245.17	490.34
		1	2	4	6	10	25	50
PR6202..C4	0.012			●	●	●	●	●
PR6202..C3	0.015		●	●	●	●	●	●
PR6202..C1	0.03	●	●	●	●	●	●	●

	Rated Capacity (Top: kN / Bottom: tf)											
4.903K	9.807	19.61	29.42	49.03	98.07	196.1	294.2	490.3	980.7	1.961K	2.942K	5.100K
500	1	2	3	5	10	20	30	50	100	200	300	520
●	●	●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●	●	●	●
			●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●							
●	●	●	●	●								
●	●	●										
●	●	●										
●	●	●										
●	●	●	●									
●	●	●	●									
●	●	●	●									

Product Features

Stainless Steel Housing – Waterproof Design (IP67 or higher)

Load cells adopt a stainless steel housing as standard. This hermetically sealed structure is completely waterproof, resulting in a weighing system that can be used over long periods.

Digital Load Cells

Pendeo® Process / Truck

Completely waterproof IP68/69K

High accuracy type

C3:1/6000 (1 t - 50 t)

C6:1/12500 (25 t / 50 t)

Digital signal (RS485) communication



Product features → See details on P.28, 29

- Ideally suited to use in weighbridges
- Standardized, maintenance-free, extremely compact design
- Extremely robust design in hermetically sealed stainless steel housing
- Special strain-gage technology for significantly improved lightning protection
- High overload range (up to 150 %)
- 100 % compatible with PR 6221
- Reaches stability quickly which ensures short weighing times
- High EMC compatibility (10 V/m)
- Suitable for use in ATEX zone 2/22
- Additional reliability thanks to diagnostic function

Weighing Modules

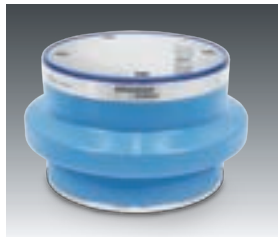
Contego® Hygienic Weighing Module

Jet spray cleaning compatible IP68/69K

Material: Top/bottom plates AISI316L

FDA certified

silicone rubber



Product features → See details on P.11

- Compact and absolute hygienic weighing solution for the load range up to 2 t
- Quick and seamless installation
- Easy cleaning without residue
- High chemical resistance
- Protective cover made of FDA-compliant silicone
- Integrated functions like lift-off protection, jack-up function and constrainer for horizontal forces
- Proven rocker-pin principle
- Ex version available
- W&M approval (acc. to OIML R60)
- EHEDG-certified
- High ingress protection by using protection class IP69K

Compression Type

PR6202 Series Hygienic Stainless Steel Load Cell

Jet spray cleaning compatible IP68/69K

Material: AISI316L



Product features → See details on P.14, 15

- Proven rocker-pin principle
- Easy corner adjustment by matched load cell output
- Full stainless steel construction
- Wide temperature range
- High overload capacity
- Resistant against vibrations
- Hermetically sealed, IP68 (depth 1.5 m / 10,000 hrs.), IP69K
- Ex-version available (PR 6202/-E)
- W&M approval (acc. OIML R 60)

Compression Type

PR6203 Series High Overload Capacity Stainless Steel Load Cell

Completely waterproof IP68

Material: 304S11/S15 (B.S.)

Same height from 500 kg to 75 t



Product features → See details on P.16 ~ 19

- Proven rockerpin design
- Full stainless steel housing
- Wide temperature range
- High overload capacity
- Resistant against vibrations
- IP68, IP69K
- Suitable for Smart Calibration
- Optionally available as dual bridge version
- Ex-Version available
- Optionally available with an extended temperature range up to 150 °C
- In combination with selected mounting kits certified according to EN 1090

Compression Type

PR6241 Series Ultra-High Accuracy Stainless Steel Load Cell

Completely waterproof IP68

Material: S604/622 (B.S.)

C6 type: Accuracy 1/12500

OIML R60 certified



Product features → See details on P.23

- Easy to install and use
- Easy corner adjustment by matched load cell outputs
- Full stainless steel construction
- Wide temperature range
- Resistant against vibrations
- Hermetically sealed, IP 68 (depth 1.5 m / 10,000 hrs.)
- Ex-version available
- W&M approval (According to OIML R60)

Compression Type

PR6211/6212 Series Compression Type Ultra-Compact Stainless Steel Load Cell

PR6211 Series

Rated capacity: 30 ~ 300 kg
Completely waterproof IP68
Material: Stainless steel 1.4542

PR6212 Series

Rated capacity: 500 kg ~ 10 t
Completely waterproof IP68/IP69K
Material: Stainless steel 1.4418



Product features → See details on P.24

- Easy to install in limited space
- Easy corner adjustment by matched D1 load cell outputs
- Full stainless steel construction
- Wide temperature range
- Resistant against vibrations
- Hermetically sealed, IP68 (depth 1.5 m / 10,000 hrs.), IP69K
- Ex-version available (500kg...10t)
- W&M approval (acc. OIML R 60)

Beam Type

PR6207 Series Stainless Steel Load Cell

Completely waterproof IP67
Material: Stainless steel 1.4122



Product features → See details on P.26

- Easy to install and use
- Full stainless steel construction
- Wide temperature range
- Resistant against vibrations
- Hermetically sealed, IP 67
- Compatible with other sources

Square Beam Type

MP79 Series Stainless Steel Load Cell

Completely waterproof IP68/IP69K
Material: Stainless steel 17-4PH
(1.4548)
Meteor Series



Model	Rated Capacity		C3MR
MP79 MP79T / 227kg C3MR	227 kg	Accuracy class (%)	0.02
MP79 MP79T / 454kg C3MR	454 kg	Safe overload (%E _{max})	200
MP79 MP79T / 1134kg C3MR	1134 kg	Destructive load (%E _{max})	> 300
MP79 MP79T / 2268kg C3MR	2268 kg	Rated output (mV/V)	2.0
MP79 MP79T / 5099kg C3MR	5099 kg	Zero output signal (%C _n)	<± 5.0
		Nominal ambient temperature range (°C)	-10 ~ 40

Tension and Compression Type

MP76 Series Stainless Steel Load Cell

Hermetic structure (IP67)
Material: 500 kg or less AISI420
1000 kg or more AISI630
Meteor Series



Model	Specifications
MP76 / 60kg C3	Accuracy class (%) 0.025
MP76 / 125kg C3	Safe overload (%E _{max}) 150
MP76 / 250kg C3	Destructive load (%E _{max}) >300
MP76 / 500kg C3	Rated output (mV/V) 2
MP76 / 1t C3	Zero output signal (%C _n) ± 2
MP76 / 2t C3	Nominal ambient temperature range (°C) -10 ~ 40
MP76 / 3t C3	
MP76 / 5t C3	

Hygienic Load Cell Series Features



Hygienic Load Cell Contego Series



Hygienic Load Cell PR6202 Series

Hygienic design load cells feature not only high-accuracy but also more sanitary, superbly clean weight measurement, perfect for medical and food processing fields

• Sanitary design

Load cell accredited by EHEDG

What is EHEDG?

The acronym of the European Hygienic Engineering & Design Group

The basic purpose of EHEDG is the promotion of safe food by improving hygienic engineering and design in all aspects of food manufacture. EHEDG actively supports European legislation, which requires that handling, preparation processing and packaging of food is done hygienically using hygienic machinery and in hygienic premises.

* Excerpted from the EHEDG website

• The sealed structure prevents the ingress of dust or liquid into the load cell mount

The sealed structure entails no reduction in accuracy.

Silicone is adopted for the cover (FDA approved)

The shape has been deliberately chosen to be easily wiped clean

There is also a built-in slide stop mechanism

* Contego Series

• Water puddle formation is prevented by the use of a pyramidal design with no horizontal surface for the load cell shape

Mounting bracket structure also satisfies EHEDG guidelines

* PR6202 Series

• Completely waterproof structure IP68/IP69K supported

Stainless steel welded hermetic structure enables submersion in 1.5 m depth of water for 10,000 hours without problems.

Contego / PR6202 types are IP69K* (jet spray) certified products.

• Uses AISI316L stainless steel

PR6202 housing

Contego top/bottom plates



Mounting example using Contego



Conventional mounting example





Bellows structure

• Stainless steel housing

Load cells are of stainless steel specification as standard.
PR6202 types have a fully stainless steel structure and AISI316L housing.

• Completely waterproof structure (IP68 standard)

Stainless steel welded hermetic structure enables submersion in 1.5 m depth of water for 10,000 hours without problems.
PR6202 types are IP69K* (jet spray) certified products.

• Complete nitrogen gas encapsulation

Protects the strain gage and electronic components.

• Automatic alignment structure, tumbler principle

The two-piece spherical contact structure has a center of gravity as low as possible, so that when a lateral load is applied, a restoration force is generated and the load cell is always inclined to remain vertical.

• Vibration resistance

Using the test standard IEC 68-2-6 Fc (JIS-060068-2-6:1999) sine wave vibration test method, it has passed the 100 hours test at frequencies of 10-150 Hz and acceleration of 20 g.

• Compact, same dimensions, simple design

PR6203 types are selectable from 500 kg to 75 t
PR6212 types are selectable from 500 kg to 10 t
Both have the same dimensions.

• Structure cancels peripheral torsion

Design helps avoid the effects of centrifugal force
Processed element with applied strain gage eliminates external disturbances.

• Lineup of high accuracy load cells, handling demands for various accuracy levels

PR6203 C3 type: 1/7000
PR6202 C4 type: 1/8300
PR6241/C6 type: 1/12500

* IP69K protection degree specification

IP69K is a protection standard with regard to high temperatures and high water pressures, defined by the German standard DIN 40050 PART 9. 80°C water is directed at the test piece using a specifically shaped nozzle at 80 ~ 100 bar water pressure. The water volume is 14 ~ 16 L/min. The distance from nozzle to test piece is 10 ~ 15 cm, with water discharge position at 0, 30, 60 and 90 degrees relative to horizontal. Water is directed from each position for 30 seconds each while rotating.



Load Cells



Load Cells



- Hygienic design (EHEDG compliant)
- Highly corrosion-resistant top/bottom plates (AISI316L)
- FDA compliant silicone rubber sides
- Completely waterproof IP68/IP69K
- Cable outlet available in 2 directions (Horizontal: A, vertical: B)
- Base plate optionally available

Model	Rated Capacity (kg)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6041/12 D1 A/B	100	11	12	24 x 24 x 18.5
PR6041/22 D1/C3 A/B	200	11	12	24 x 24 x 18.5
PR6041/32 D1/C3 A/B	300	11	12	24 x 24 x 18.5
PR6041/52 D1/C3 A/B	500	11	12	24 x 24 x 18.5
PR6041/13 D1/C3 A/B	1,000	11	12	24 x 24 x 18.5
PR6041/23 D1/C3 A/B	2,000	11	12	24 x 24 x 18.5

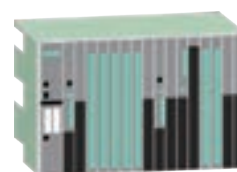
	Unit	D1	C3
Accuracy class	%	0.04	0.015
Safe load limit	%	150	
Destructive load	%	> 300	
Rated output	mV/V	2	
Rated output tolerance	%	< 0.25	< 0.07
Non-linearity	%	< 0.03	< 0.01
Temperature effect on Zero	%/10°C	< 0.028	< 0.01
Temperature effect on Span	%/10°C	< 0.03	< 0.01
Input impedance	Ω	650 ± 6	
Output impedance	Ω	610 ± 1	610 ± 0.5
Nominal supply voltage	V	4 ~ 24	
Nominal ambient temperature range	°C	- 10 ~ + 55	
Usable ambient temperature range	°C	- 30 ~ + 95	
Cable specification	PTE thermoplastic, 4-core shielded cable length: 5 m / diameter: 6 mm / Cable 4 x 0.35 mm²		
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray		



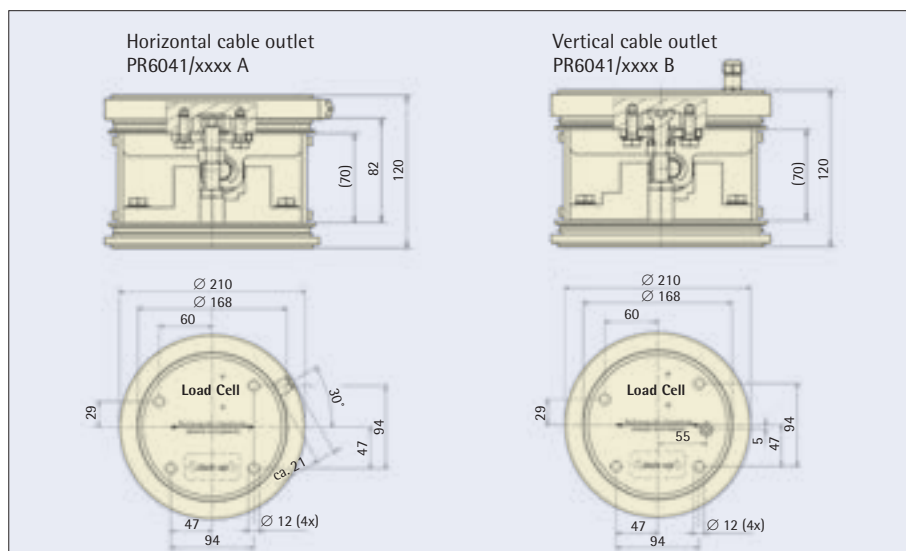
Stainless steel housing
Hygienic Transmitter
PR5230 (summing box optionally built-in)



Host PLC, etc.



CC-Link, Ethernet, DeviceNet, etc.



Novego Hygienic Weighing Module

Hygienic all-in-one solution for reliable weighing of vessels



The weighing module NovegoR was developed in line with the stringent design standards of the European Hygienic Engineering and Design Group (EHEDG).



Features

- Hygienic weighing module ensures efficient cleaning
- High degree of process reliability and precision thanks to the innovative side-force-resistant system
- Quick and easy commissioning due to smart add-on parts
- Durable, reliable weighing solution with excellent corrosion resistance

Model	Rated Capacity (kg)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6261/125kgC3/C3E	125	1.0	2.0	24 x 24 x 15.5
PR6261/250kgC3/C3E	250	1.2	2.0	24 x 24 x 15.5
PR6261/500kgC3/C3E	500	1.2	2.0	24 x 24 x 15.5
PR6261/1tC3/C3E	1000	1.2	2.0	24 x 24 x 15.5
PR6261/2tC3/C3E	2000	1.2	2.0	24 x 24 x 15.5

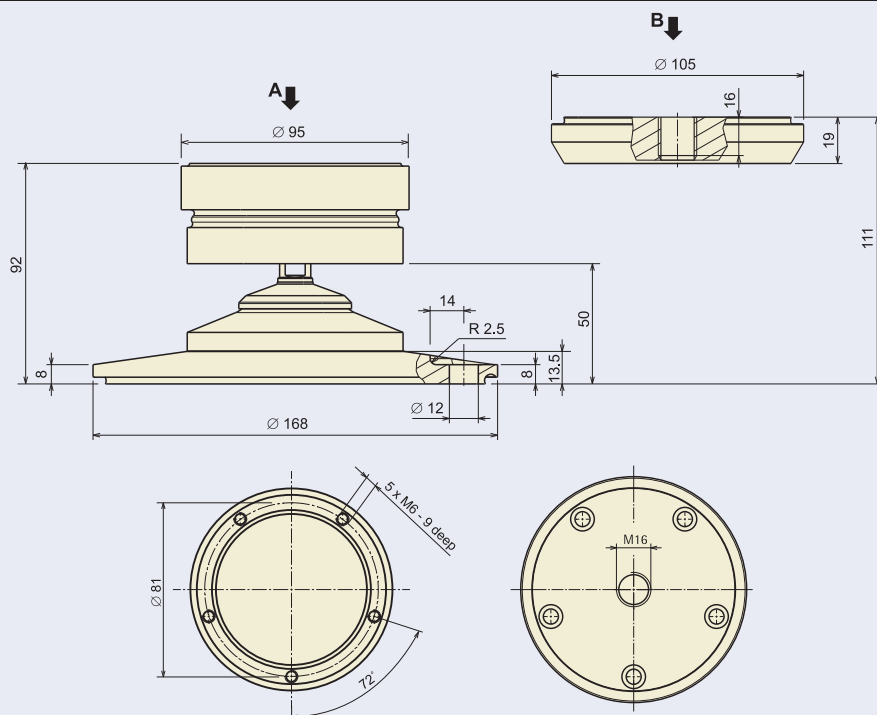
	Unit	C3/C3E
Accuracy class	%	0.015
Safe load limit	%	150
Destructive load	%	300
Rated output	mV/V	2
Rated output tolerance	%	< 0.07
Non-linearity	%	< 0.01
Temperature effect on Zero	%/10°C	< 0.01
Temperature effect on Span	%/10°C	< 0.01
Input impedance	Ω	1080 ± 10
Output impedance	Ω	1010 ± 1
Nominal supply voltage	V	4 ~ 20
Nominal ambient temperature range	°C	- 10 ~ + 40
Usable ambient temperature range	°C	- 40 ~ + 95
Cable specification	PTE, 4-core shielded cable length: 5 m / diameter: 5 mm / cable 4 x 0.35 mm	
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray	

External Dimensions

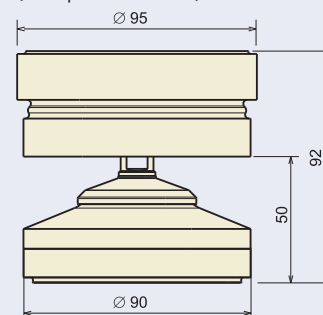
Dimensions of PR6061/03S (with pendulum base)

Without adapter plate (PR 6061/00S)

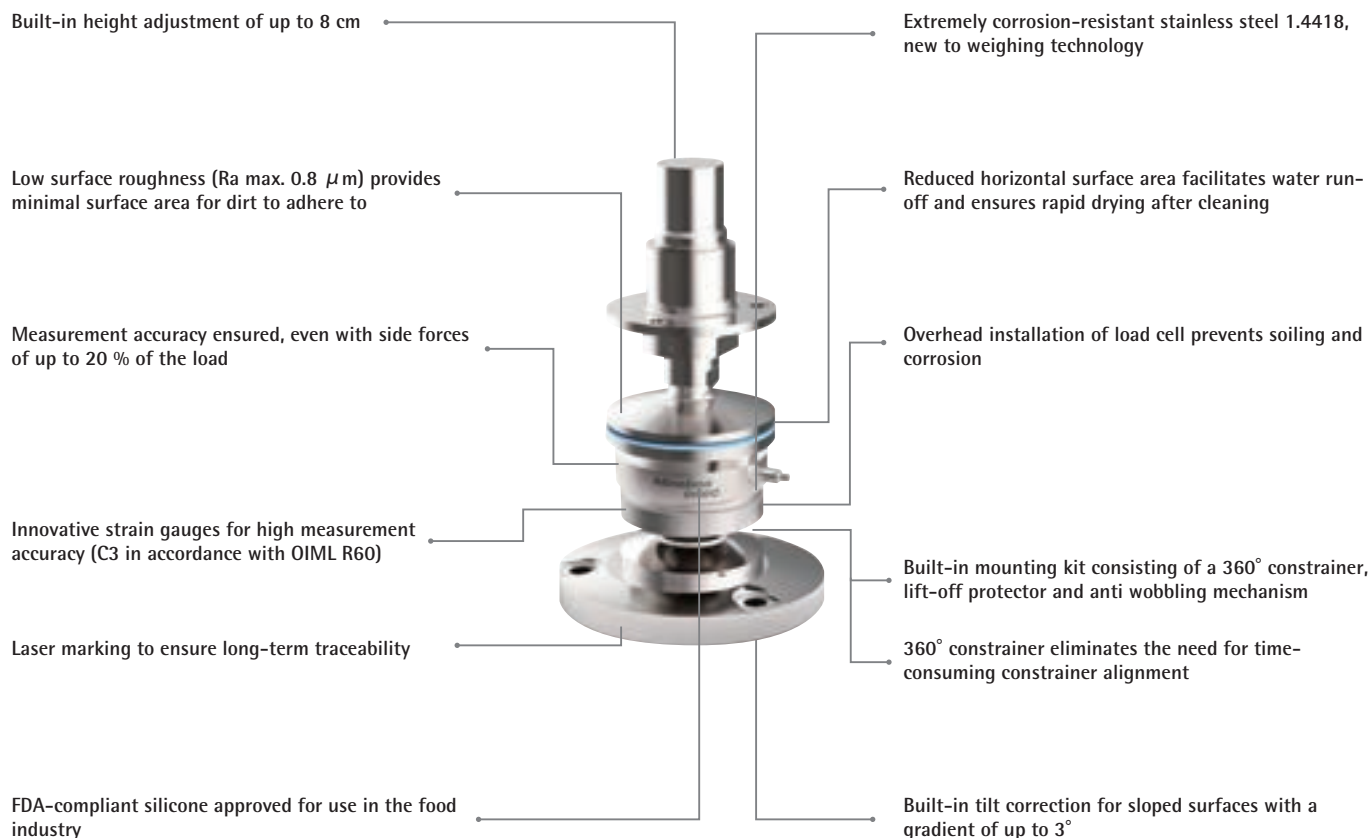
With adapter plate (PR 6061/00S)



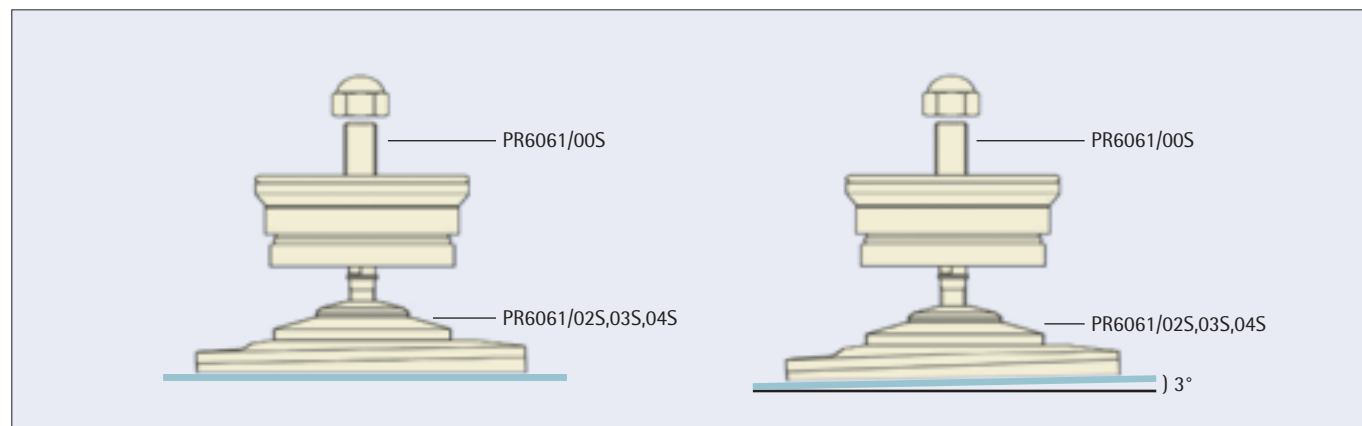
Dimensions of PR6061/02S (with pendulum base)



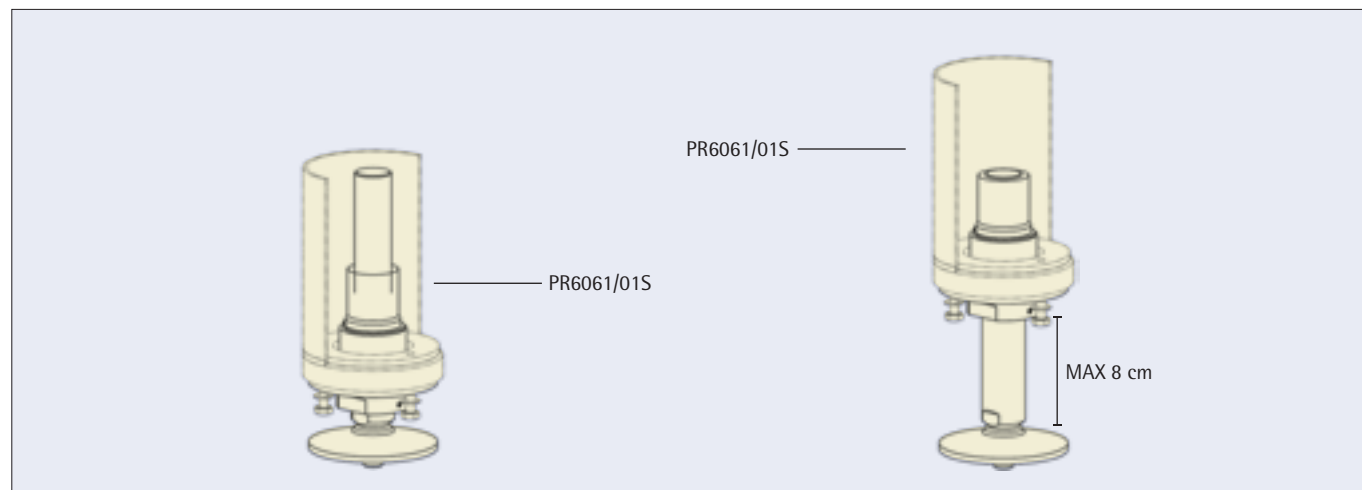
Dimensions in mm



Built-in tilt correction and height adjuster



Built-in tilt correction for sloped surfaces with a gradient of up to 3°



Built-in height adjuster to balance out vessel feet

PR6202 Series Compression Type Ultra-High Accuracy Hygienic Stainless Steel Load Cell

Ideal for medical, fine chemical and food manufacturing facilities requiring high levels of hygiene and cleanliness. (EHEDG compliant)
The fully stainless steel structure using AISI316L enables cleaning using a jet spray.



1t.....50t, C1/C3/C4

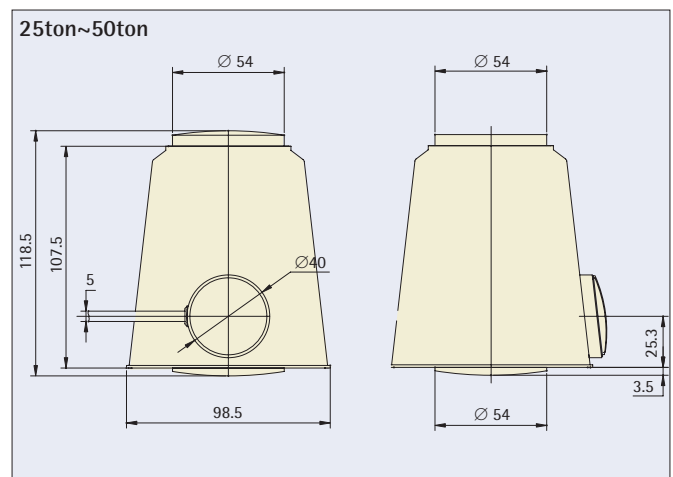
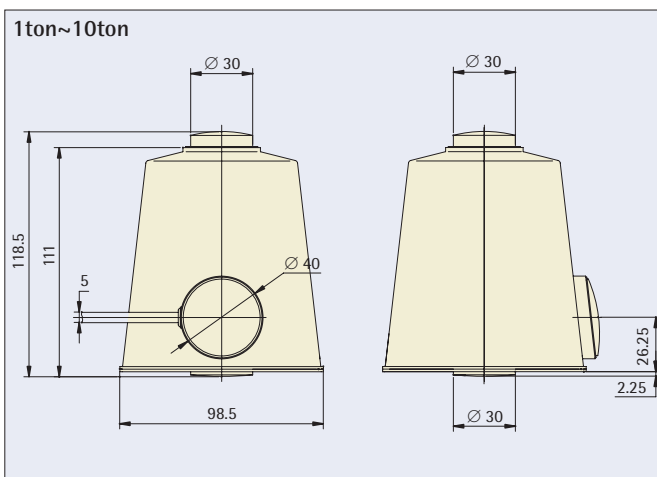
Features

- Highly corrosion-resistant housing material AISI316L
- Average surface roughness less than 1 μm
- Completely waterproof IP68/69K
- Completely water-draining structure (EHEDG compliant)
- Automatic alignment function
- Wide operating temperature range: -40 to +95°C
- Completely water-draining mounting FlexLock PR6002 type available
- Registered design
EU 000 210 349-0001/-0002
Japan 2005-478
US 22/222, 249

Model	Rated Capacity (t)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6202/1t/C1	1	1.2	2.1	24 x 24 x 15.5
PR6202/2t/C1/C3	2	1.2	2.1	24 x 24 x 15.5
PR6202/4t/C1/C3/C4	4	1.2	2.1	24 x 24 x 15.5
PR6202/6t/C1/C3/C4	6	1.2	2.1	24 x 24 x 15.5
PR6202/10t/C1/C3/C4	10	1.6	2.5	24 x 24 x 15.5
PR6202/25t/C1/C3/C4	25	2.8	3.7	24 x 24 x 15.5
PR6202/50t/C1/C3/C4	50	3.2	4.1	24 x 24 x 15.5

	Unit	C1	C3	C4
Accuracy class	%	0.03	0.015	0.012
Safe load limit	%	150	150	150
Destructive load	%	> 300	> 300	> 300
Rated output	mV/V	2	2	2
Rated output tolerance	%	< 0.25	< 0.07	< 0.07
Non-linearity	%	< 0.03	< 0.01	< 0.01
Temperature effect on Zero	%/10°C	< 0.02	< 0.01	< 0.008
Temperature effect on Span	%/10°C	< 0.028	< 0.01	< 0.008
Input impedance	Ω	1080 $\pm$ 10	1080 $\pm$ 10	1080 $\pm$ 10
Output impedance	Ω	1010 $\pm$ 2	1010 $\pm$ 2	1010 $\pm$ 2
Nominal supply voltage	V	4 ~ 24	4 ~ 24	4 ~ 24
Nominal ambient temperature range	°C	- 10 ~ + 55	- 10 ~ + 55	- 10 ~ + 55
Usable ambient temperature range	°C	- 40 ~ + 95	- 40 ~ + 95	- 40 ~ + 95
Allowable horizontal movement	mm	10	10	10
Restoration force	Up to 6 t: 0.65% of load cell actual load 10 t: 0.76% of load cell actual load 25 t or more: 1.58% of load cell actual load			
Cable specification	PTE thermoplastic 4-core shielded, diameter 5 mm, 4 x 0.35 mm ² Cable length: 10 t or less: 5 m 25 t or more: 12 m			
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray			

External Dimensions



Dimensions in mm

For PR6202 Load Cells

PR6202 Series New Mounting Kit Hygienic FlexLock System

A load cell mounting kit developed especially for PR6202 type hygienic load cells. The design is based on EHEDG requirements. Features include an evolved lift off protection and dummy function.



Spray cleaning is sufficient for total cleaning.

Features

- Ideal for weighing systems in sanitary environments
- Fully washable design fulfills EHEDG directives
- 100% maintenance free
- Fully stainless steel version
- Easy and fast load cell installation
- Strength calculation is compliant with Germanischer Lloyd standards
- Evolved and perfected lift off protection mechanism and dummy pipe equipped as standard

What is a hygienic (sanitary) design?

The following criteria apply.

- 1) Water drains completely when spray cleaned
- 2) No grooves or indentations on device surface
- 3) Devices have no edges
- 4) Optimal materials that do not corrode are used
- 5) If contaminants adhere to the device, they can be easily sprayed clean

Mounting kit: With slide stop and lift off protection mechanism

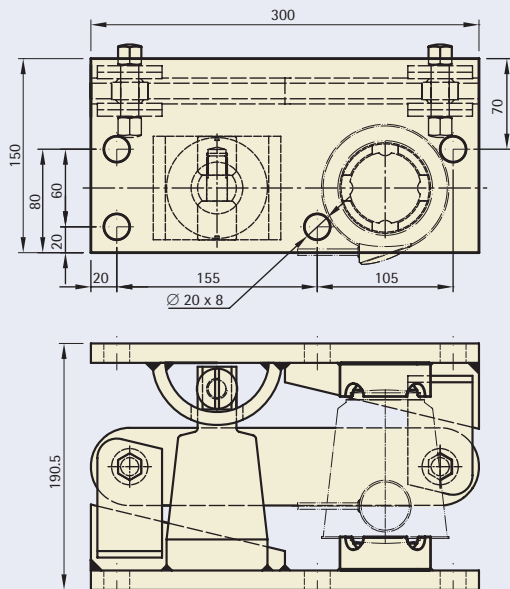
Model Stainless Steel	Load Cell Capacity	Destructive Lateral Force (tf)	Permissible Lift Off Protection Force (tf)	Package Size (L x W x H cm)	Weight (kg)	
					Net	Gross
PR6002/04S	1 t ~ 10 t	3.5	2.5	30 x 18 x 21	13.2	13.5
PR6002/05S	25 t ~ 50 t	3.5	2.5	30 x 18 x 21	13.4	13.7

FlexLock: With vibration damping rod and lifting prevention mechanism

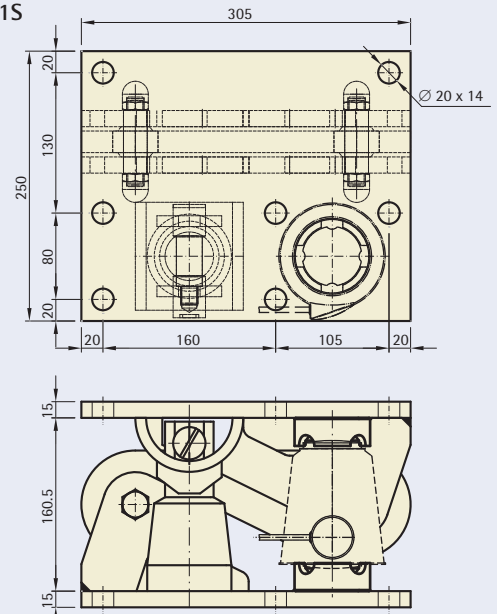
Model Stainless Steel	Load Cell Capacity	Destructive Lateral Force (tf)	Permissible Lift Off Protection Force (tf)	Package Size (L x W x H cm)	Weight (kg)	
					Net	Gross
PR6002/10S	1 t ~ 10 t	5.0	2.5	32 x 18 x 21	21.8	22.2
PR6002/11S	25 t ~ 50 t	5.0	2.5	32 x 18 x 21	22.0	22.4
PR6002/20S	1 t ~ 10 t	10	8	35 x 30 x 21	34.5	35.5
PR6002/21S	25 t ~ 50 t	10	8	35 x 30 x 21	34.5	35.5

External Dimensions

PR6002/11S (PR6002/10S dimensions are the same)



PR6002/20S, 21S



Dimensions in mm

PR6203 Series Compression Type High Accuracy Standard Stainless Steel Load Cell (D1 (E) ~ C6 (E))

Load cell with automatic alignment function.



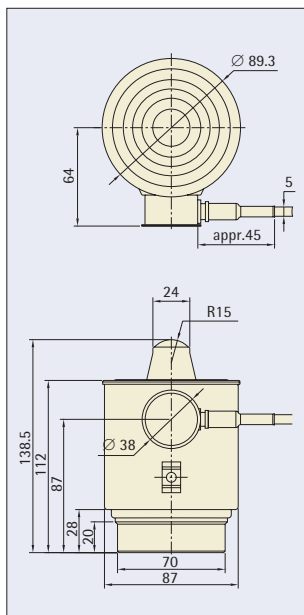
Features

- Stainless steel housing: SUS304 equivalent
- Completely waterproof IP68
- Wide range of accuracy supported: D1 (E) ~ C6 (E)

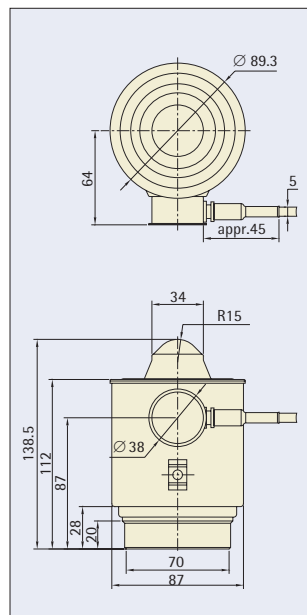
Model	Rated Capacity (tf)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6203/500kg/D1 (E)	0.5	1.0	2.0	24 x 24 x 15.5
PR6203/1t/D1 (E)	1	1.2	2.0	24 x 24 x 15.5
PR6203/2t/D1 (E), C3 (E)	2t/D1	1.2	2.0	24 x 24 x 15.5
PR6203/3t/D1 (E), C3 (E), C6 (E)	3	1.2	2.0	24 x 24 x 15.5
PR6203/5t/D1 (E), C3 (E), C6 (E)	5	1.2	2.0	24 x 24 x 15.5
PR6203/10t/D1 (E), C3 (E), C6 (E)	10.0	1.5	2.5	24 x 24 x 15.5
PR6203/20t/D1 (E), C3 (E), C6 (E)	20.0	2.5	3.5	24 x 24 x 15.5
PR6203/30t/D1 (E), C3 (E), C6 (E)	30.0	3.0	4.0	24 x 24 x 15.5
PR6203/50t/D1 (E), C3 (E), C6 (E)	50.0	3.0	4.0	24 x 24 x 15.5
PR6203/60t/D1 (E), C3 (E), C6 (E)	60.0	3.0	4.0	24 x 24 x 15.5
PR6203/70t/D1 (E), C3 (E), C6 (E)	70.0	3.0	4.0	24 x 24 x 15.5

	Unit	D1/D1E	C3/C3E	C6/C6E
Accuracy class	%	0.04	0.015	0.008
Safe load limit	%	150 (60 t: 125, 75 t: 100)		
Destructive load	%	300 (60 t: 250, 75 t: 200)		
Rated output	mV/V	2.0	2.0	2.0
Rated output tolerance	%	< 0.25	< 0.07	< 0.07
Non-linearity	%	< 0.03	< 0.01	< 0.01
Temperature effect on Zero	%/10°C	< 0.028	< 0.01	< 0.007
Temperature effect on Span	%/10°C	< 0.03	< 0.01	< 0.005
Input impedance	Ω	650 ± 6	650 ± 6	650 ± 6
Output impedance (less than 50t)	Ω	610 ± 1	610 ± 0.5	610 ± 0.5
Output impedance (60t)	Ω	510 ± 1	510 ± 0.5	510 ± 0.5
Output impedance (70t)	Ω	410 ± 1	410 ± 0.5	410 ± 0.5
Nominal supply voltage	V	4 ~ 24	4 ~ 24	4 ~ 24
Nominal ambient temperature range	°C	- 10 ~ + 40	- 10 ~ + 40	- 10 ~ + 40
Usable ambient temperature range	°C	- 40 ~ + 95	- 40 ~ + 95	- 40 ~ + 95
Cable specification	PTE, 4-core shielded cable length: 5m (less than 10t), 12m (more than 12t) / diameter: 5mm / cable 4 x 0.35mm			
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray			

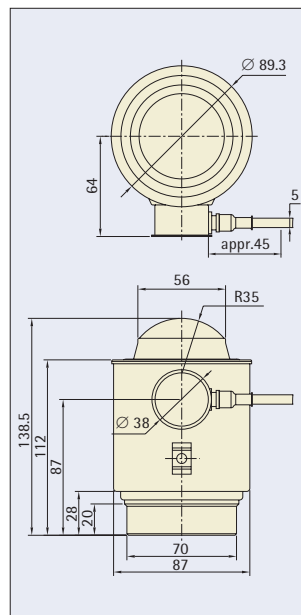
Load Cell PR6203 Type External Dimensions 500 kg ~ 75 t Rated



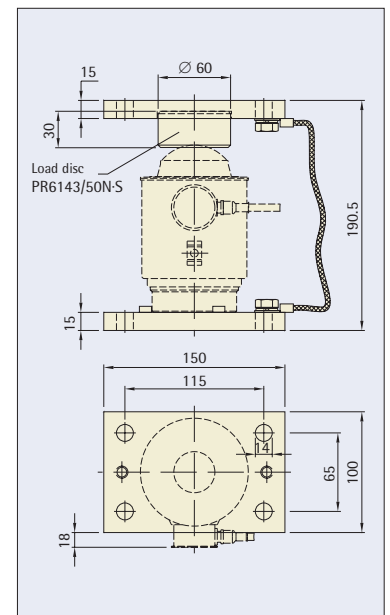
PR6203/500 kg ~ 3 t



PR6203/5 t ~ 10 t

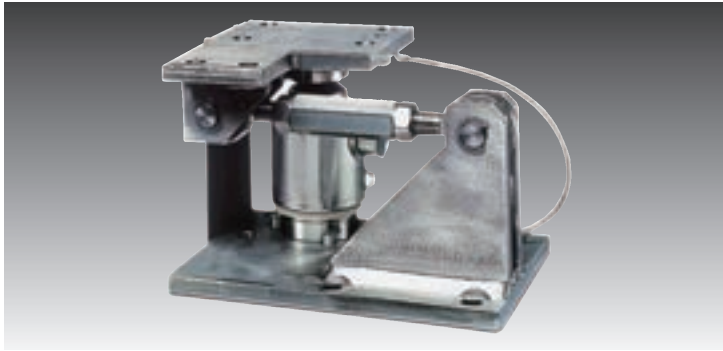


PR6203/20 t ~ 75 t



PR6145/00 top/bottom mounting kit
Dimensions in mm

For PR6203 Load Cells PR6143 Compact Mounting Kit



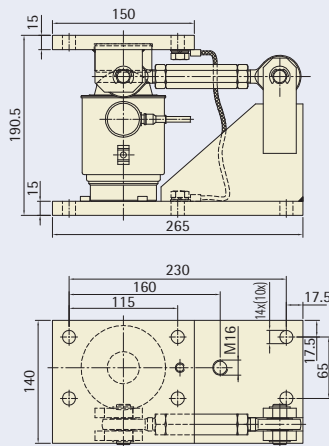
Features

- Extremely durable swivel bearings
- Easy and fast installation
- Professional and flexible solution also for problematic locations
- Standard dimensions for different versions
- Stainless steel version available
- Engineered to withstand highest lateral force
- Optional inclusive constrainer
- Maintenance free
- Certified according to EN 1090

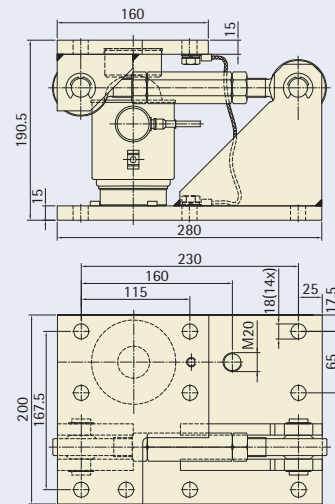
Model	Material	Destructive Lateral Force (kN)	Package Size (L x W x H cm)	Weight (kg)		Vibration Damping Method
				Net	Gross	
PR6143/00N	SS plated	35	340 x 260 x 190	9	10.8	Ball joint mechanism
PR6143/00S	SUS	35	340 x 260 x 190	9	11.7	Ball joint mechanism
PR6143/10N	SS plated	70	360 x 280 x 190	14.8	16.9	Ball joint mechanism
PR6143/10S	SUS	70	360 x 280 x 190	18	19.7	Ball joint mechanism
PR6143/15N	SS plated	236	400 x 300 x 290	69	77.5	Ball joint mechanism
PR6143/25N	SS plated	236	400 x 340 x 385	106.2	98.2	Ball joint mechanism

External Dimensions

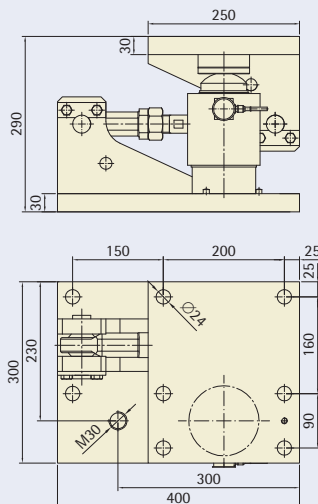
PR 6143/00N+S



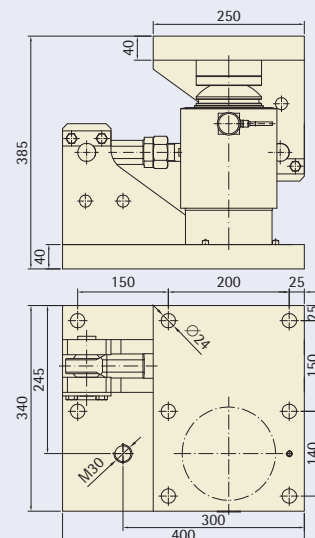
PR 6143/10N+S



PR 6143/15N+S



PR 6143/25N+S



Dimensions in mm

PR6001 Mounting Kit



Features

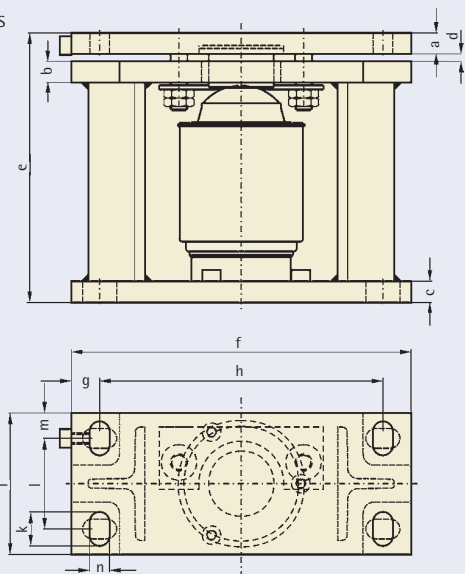
- Easy and fast installation
- Applicable for capacities from 500kg to 300t
- Stainless steel version available
- Designed to withstand high lateral forces
- Certified by "Germanischer Lloyd"
- With built-in dummy function
- Maintenance free
- Inclusive constrainer
- Certified according to EN1090

Model	Material	Destructive Lateral Force (kN)	Permissible Lift Off Protection Force (tf)	Weight (kg)		Vibration Damping Method
				Net	Gross	
PR6001/00N	SS plated	20	20	10.1	10.4	Stopper type
PR6001/00S	SUS	20	20	10.9	11.2	Stopper type
PR6001/01N	SS plated	20	30	10.1	10.4	Stopper type
PR6001/01S	SUS	20	30	11.2	10.9	Stopper type
PR6001/02N	SS plated	28	40	27.5	27.5	Stopper type
PR6001/03N	SS plated	34	50	60	60	Stopper type

External Dimensions

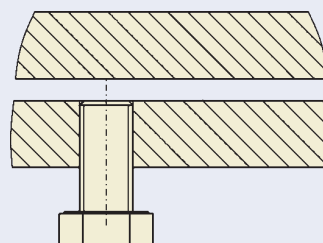
Universal vessel foot PR 6001/0X (500 kg... 300 t)

PR 6001/0N&S

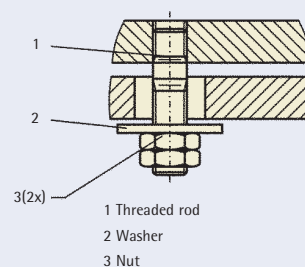


Jack-up (only PR 6001/00)

$F_{max} = 1.2 \text{ t}$



Internal lifting prevention



	a	b	c	d	e	f	g	h	i	k	l	m	n
PR 6001/00	15	15	15	5	190.5	240	20	200	100	24	64	18	14
PR 6001/01	15	15	15	5	190.5	240	20	200	100	24	64	18	14
PR 6001/02	30	20	30	8	290	300	23	254	130	32	84	23	18
PR 6001/03	40	20	40	10	385	370	30	310	180	40	120	30	22

Dimensions in mm

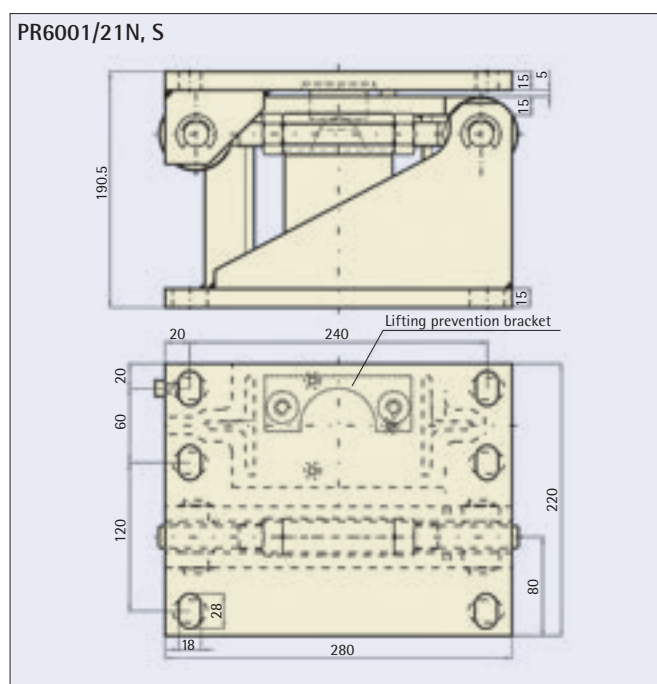
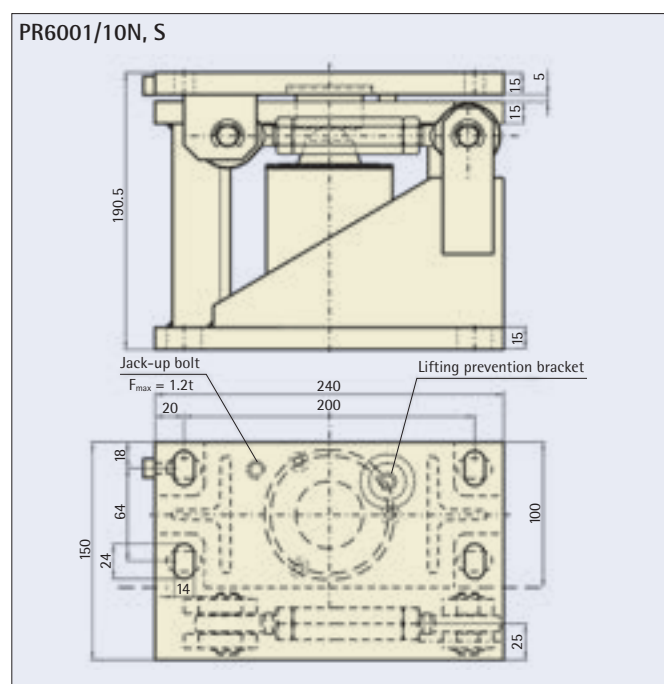
Features

Load Cells



Applicable Load Cells PR6201 20 t ~ 50 t

External Dimensions



Dimensions in mm

PR6201 Series High Safe Overload Load Compression Type Stainless Steel Load Cell

Stainless steel load cells for high capacity.



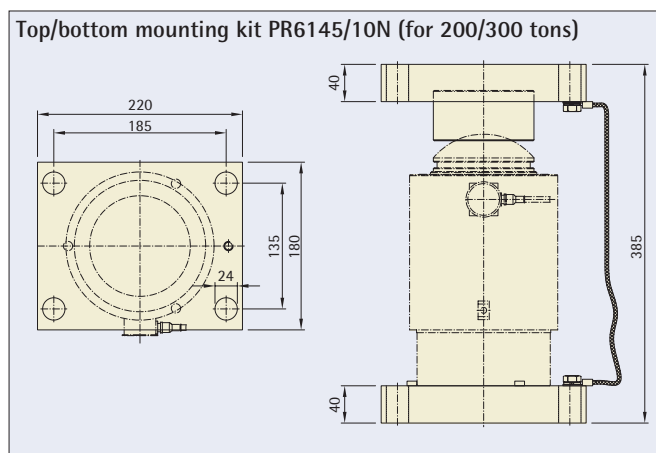
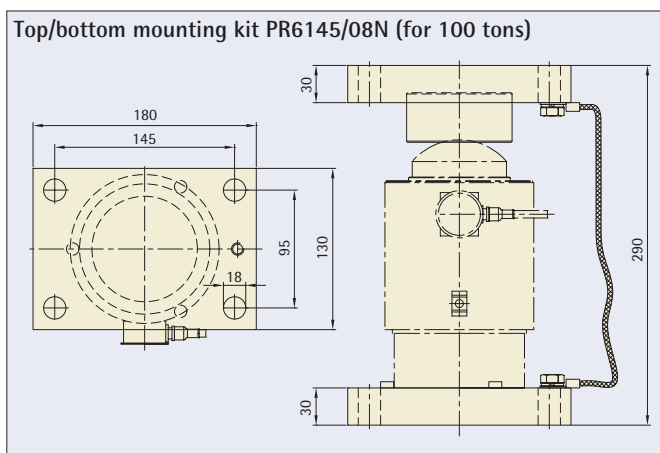
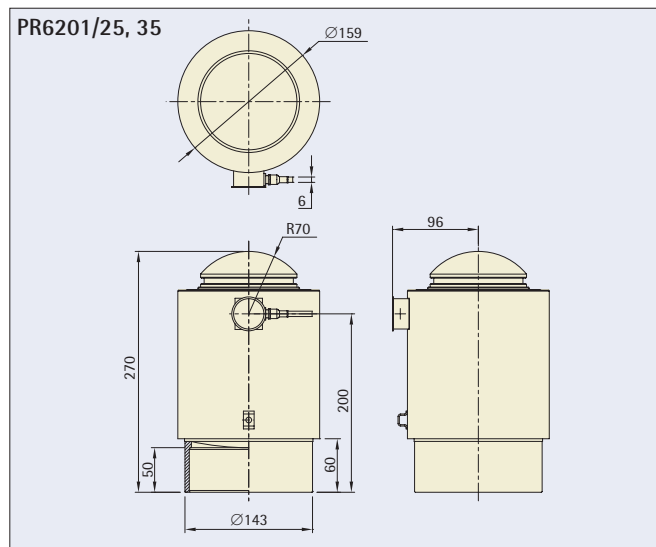
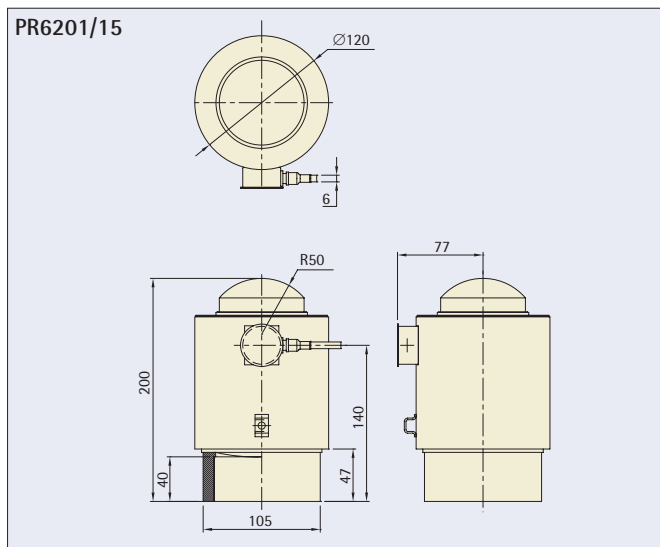
Model	Rated Capacity (t)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6201/15 L/N	100	11.2	12.9	28 x 28 x 35
PR6201/25 N	200	26.0	29.0	34 x 35 x 47
PR6201/35 N	300	26.0	29.0	34 x 35 x 47

	Unit	15 L	15 N	25 N, 35 N
Accuracy class	%	0.5	0.06	0.06
Safe load limit	t	400	400	400
Destructive load	t	500	500	1000
Rated output	mV/V	1	1	1 (300 t : 1.5)
Rated output tolerance	%	< 1.0	< 0.25	
Non-linearity	%	< 0.3	< 0.05	
Temperature effect on Zero	%/10°C	< 0.2	< 0.06	
Temperature effect on Span	%/10°C	< 0.1	< 0.03	
Input impedance	Ω	650 ± 50	650 ± 6	
Output impedance	Ω	610 ± 3	610 ± 1	
Nominal supply voltage	V	4 ~ 24	4 ~ 24	
Nominal ambient temperature range	°C	- 10 ~ + 55		
Usable ambient temperature range	°C	- 30 ~ + 55	- 40 ~ + 95	
Cable specification	PTE thermoplastic, 4-core shielded cable length: 12 m Diameter: 6 mm / Cable 4 x 0.35 mm ²			
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray			

Features

- Stainless steel housing: SUS304 equivalent
- Completely waterproof IP68

External Dimensions



Dimensions in mm

PR6201 Series Ultra-High Safe Overload Load Compression Type Stainless Steel Load Cell

Ultra-high capacity load cell with 520 t rated output.
Low height and easy mounting.



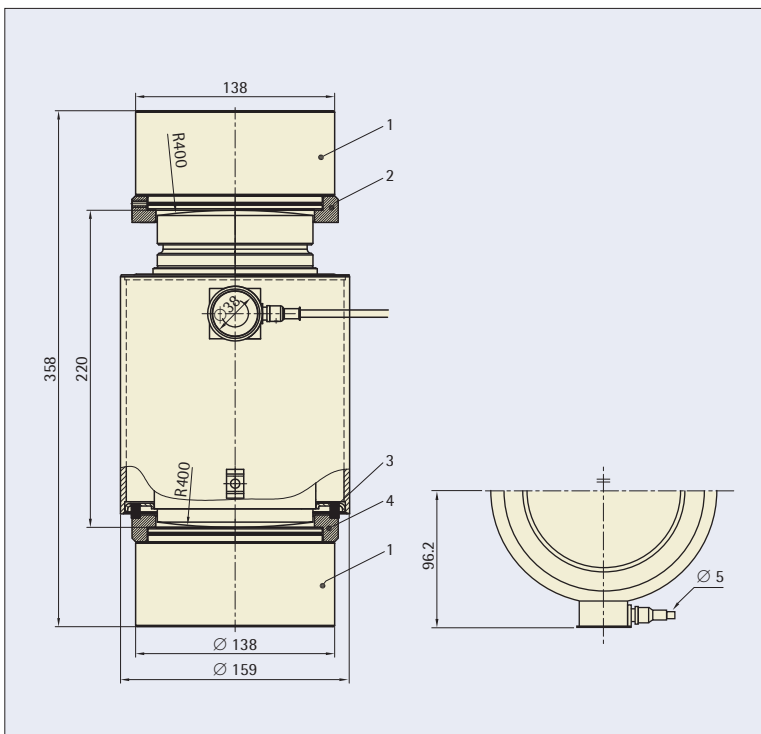
* Photo includes the load disc set (PR6143/55N)

Model	Rated Capacity (t)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6021/55L	520	20.9	22.5	28 x 28 x 32

* Excluding top/bottom disc

	Unit	L
Accuracy class	%	0.5
Safe load limit	t	550
Destructive load	t	1,000
Rated output	mV/V	2.6
Rated output tolerance	%	< 1.0
Non-linearity	%	< 0.1
Temperature effect on Zero	%/10°C	< 0.2
Temperature effect on Span	%/10°C	< 0.1
Input impedance	Ω	650 ± 50
Output impedance	Ω	610 ± 3
Nominal supply voltage	V	4 ~ 24
Nominal ambient temperature range	°C	- 10 ~ + 55
Usable ambient temperature range	°C	- 40 ~ + 95
Cable specification	PTE thermoplastic, 4-core shielded cable length: 12 m Diameter: 5 mm / Cable 4 x 0.35 mm ²	
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray	

External Dimensions



Dimensions in mm

PR6201 DB Series Double Output Compression Type Stainless Steel Load Cell

2 strain gages are applied within the load cell for double output.



Features

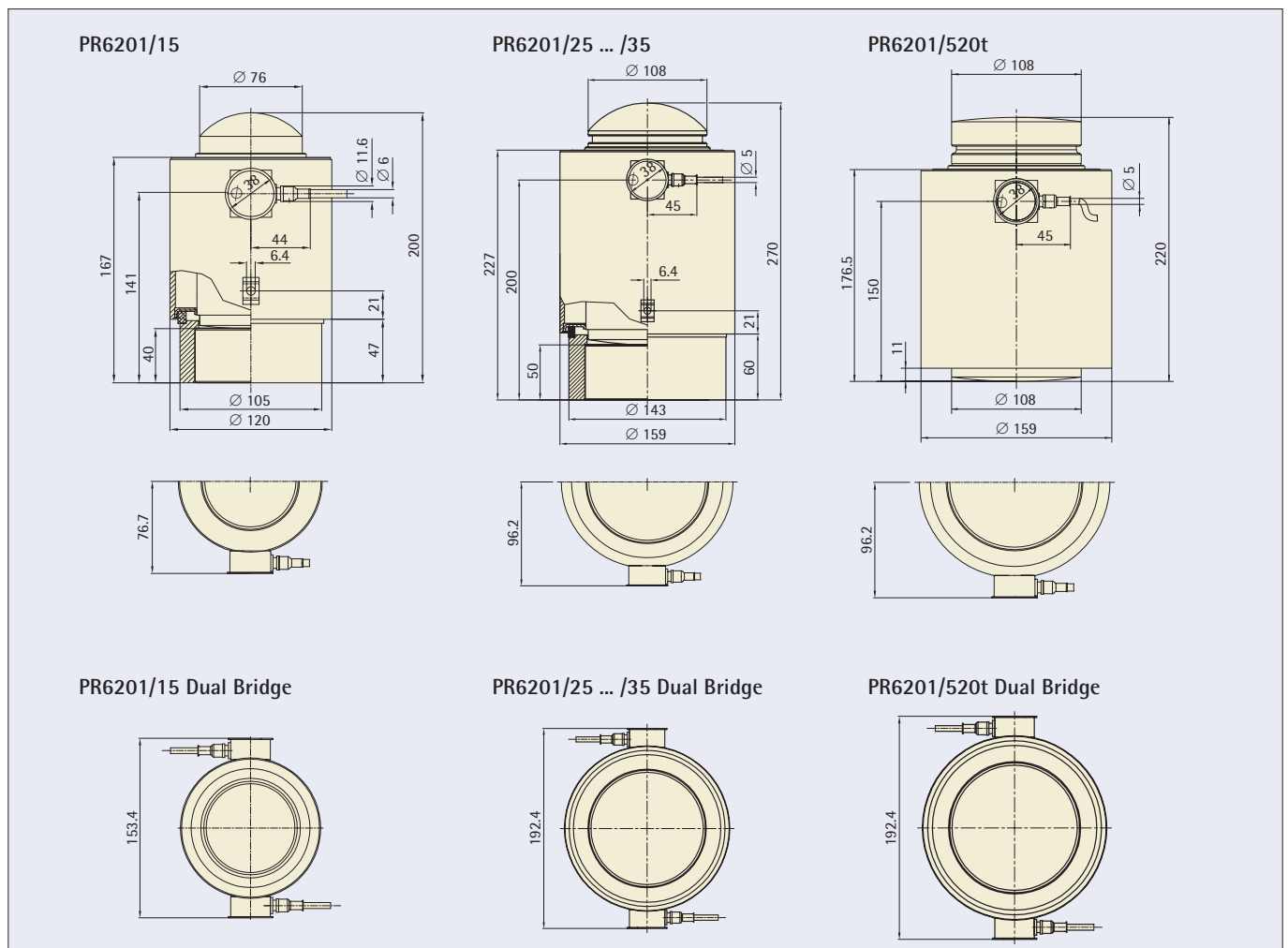
For use at steel plants, etc., enabling 1 cable to continue output even if the other cable is damaged.

Model	Rated Capacity (t)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6201/15NDB	100	11	13	25 x 25 x 27
PR6201/25NDB	200	26	29	28 x 28 x 32
PR6201/35NDB	300	26	29	28 x 28 x 32
PR6201/520t LDB	520	21	23	28 x 28 x 32

* 520 t types do not include the bottom disc

	Unit	L	N
Accuracy class	%	0.5	0.06
Safe load limit	t	400 t (550 t for PR6201/520 t)	
Destructive load	t	1,000 t (500 t for PR6201/15)	
Rated output	mV/V	1.0 (520 t : 2.6)	1.0 (300 t : 1.5)
Rated output tolerance	%	< 1.0	< 0.25
Non-linearity	%	< 0.3 (520 t : < 0.1)	< 0.05
Temperature effect on Zero	%/10°C	< 0.2	< 0.06
Temperature effect on Span	%/10°C	< 0.1	< 0.03
Input impedance	Ω	650 ± 50	650 ± 6
Output impedance	Ω	610 ± 3	610 ± 1
Nominal supply voltage	V	4 ~ 24	4 ~ 24
Nominal ambient temperature range	°C	- 10 ~ + 55	- 10 ~ + 55
Usable ambient temperature range	°C	- 40 ~ + 95	- 40 ~ + 95
Cable specification	PTE thermoplastic, 4-core shielded cable 12 m		
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray		

External Dimensions



Dimensions in mm

PR6241 Series Compression Type Ultra-High Accuracy 1/12500 Stainless Steel Load Cell (D1 ~ C6)

Compact, high-performance load cell. Individual accuracy: Achieves 1/12500! Ideal for production of high-accuracy tank scales and platform scales.



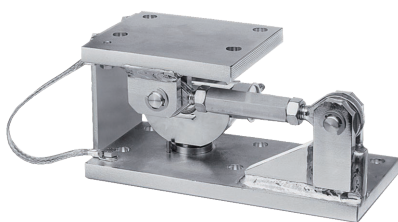
Features

- Stainless steel housing: SUS630 equivalent
- Completely waterproof IP68
- Ultra-high accuracy, C6: 1/12500

Model	Rated Capacity (t)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6241/12 D1	0.1	0.7	1.1	22 x 21.5 x 13.5
PR6241/22 D1/C3/C6	0.2	0.7	1.1	22 x 21.5 x 13.5
PR6241/32 D1/C3/C6	0.3	0.7	1.1	22 x 21.5 x 13.5
PR6241/52 D1/C3/C6	0.5	0.7	1.1	22 x 21.5 x 13.5
PR6241/13 D1/C3/C6	1	0.8	1.2	22 x 21.5 x 13.5
PR6241/23 D1/C3/C6	2	0.8	1.2	22 x 21.5 x 13.5

	Unit	D1	C3	C6
Accuracy class	%	0.04	0.015	0.008
Safe load limit	%	150		
Destructive load	%	> 300		
Rated output	mV/V	2.0		
Rated output tolerance	%	< 0.25	< 0.07	< 0.07
Non-linearity	%	< 0.03	< 0.01	< 0.01
Temperature effect on Zero	%/10°C	< 0.028	< 0.01	< 0.007
Temperature effect on Span	%/10°C	< 0.03	< 0.01	< 0.005
Input impedance	Ω	650 ± 6		
Output impedance	Ω	610 ± 1	610 ± 0.5	
Nominal supply voltage	V	4 ~ 24		
Nominal ambient temperature range	°C	- 10 ~ + 55		- 10 ~ + 40
Usable ambient temperature range	°C	- 30 ~ + 95		
Cable specification	PTE plastic, 4-core shielded cable length: 5 m / diameter: 6 mm / Cable 4 x 0.35 mm²			
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray			

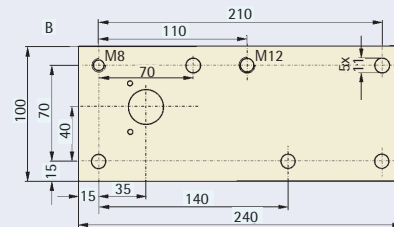
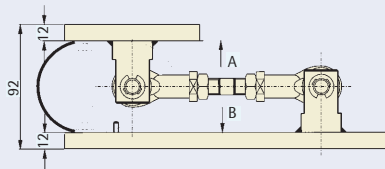
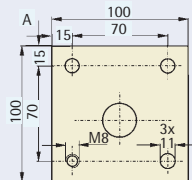
PR6043 Mounting Kit for PR6241 Load Cell



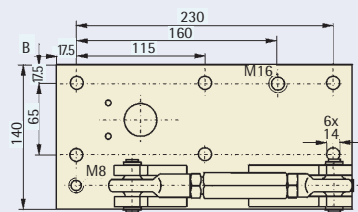
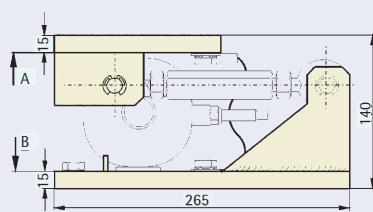
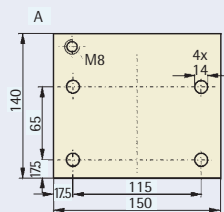
Model	Material	Destructive Lateral Force (kN)	Package Size (L x W x H cm)	Weight (kg)	
				Net	Gross
PR6043/30N	SS plated	20	26 x 13 x 13	4.3	4.8
PR6043/30S	SUS	20	26 x 13 x 13	4.3	4.8
PR6043/40N	SS plated	50	30 x 16 x 17	10.2	10.6
PR6043/40S	SUS	50	30 x 16 x 17	10.2	10.6

External Dimensions

PR 6043/30N&S



PR 6043/40N&S



Dimensions in mm

PR6211/PR6212 Series Compression Type Compact Stainless Steel Load Cell

Gage is applied using sputtering technology to dramatically improve strength and accuracy

PR6211 (rated 30 ~ 300 kg) maximum allowable load > 500 kg

High temperature (LT: rated 500 kg ~ 5 t) version is available for up to 180° C



Features (PR6211)

- Stainless steel housing: SUS630 equivalent
- Completely waterproof IP68
- Lateral load relief mechanism



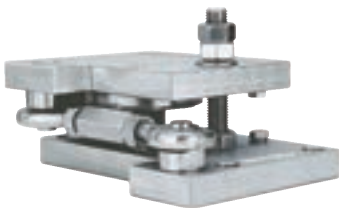
Features (PR6212)

- Stainless steel housing: 1.4418
- Completely waterproof IP68 + IP69
- Lateral load relief mechanism

Model	Rated Capacity (kg)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6211/31 D1	30	0.14	0.31	24 x 17.5 x 8
PR6211/51 D1	50	0.14	0.31	24 x 17.5 x 8
PR6211/12 D1	100	0.14	0.31	24 x 17.5 x 8
PR6211/22 D1	200	0.14	0.31	24 x 17.5 x 8
PR6211/32 D1	300	0.14	0.31	24 x 17.5 x 8
PR6212/500kg C1/LT	500	1	1.3	25 x 23 x 6
PR6212/1t C1/LT	1t	1	1.3	25 x 23 x 6
PR6212/2t C1/LT	2t	1	1.3	25 x 23 x 6
PR6212/3t C1/LT	3t	1	1.3	25 x 23 x 6
PR6212/5t C1/LT	5t	1	1.3	25 x 23 x 6
PR6212/10t C1	10t	1	1.3	25 x 23 x 6

	Unit	30 ~ 300 kg	0.5 ~ 10 t
Accuracy class	%	0.05	0.04
Safe load limit	%	> 500kg	150%
Destructive load	%	> 1000kg	> 300%
Rated output	mV/V	2.0	
Rated output tolerance	%	< 0.25	
Non-linearity	%	< 0.05	< 0.03
Temperature effect on Zero	%/10°C	< 0.042	< 0.028
Temperature effect on Span	%/10°C	< 0.030	< 0.02
Input impedance	Ω	1300 ± 12	650 ± 6
Output impedance	Ω	1200 ± 2	610 ± 1
Nominal supply voltage	V	4 ~ 24	
Nominal ambient temperature range	°C	- 10 ~ + 85	- 30 ~ + 95
Usable ambient temperature range	°C	- 30 ~ + 95	- 40 ~ + 95
Cable specification	Polyethylene, 4-core shielded cable length: 5 m / diameter: 6 mm / Cable 4 x 0.35 mm ²		
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray		

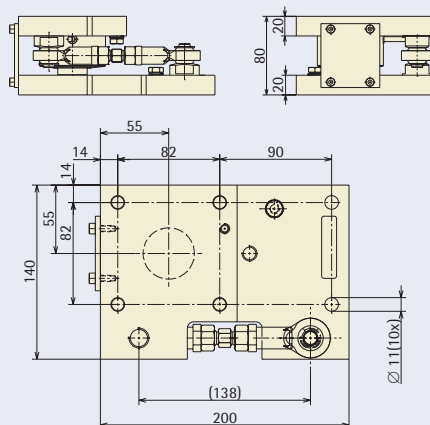
PR6012/X1 Mounting Kit for PR6212 Load Cell



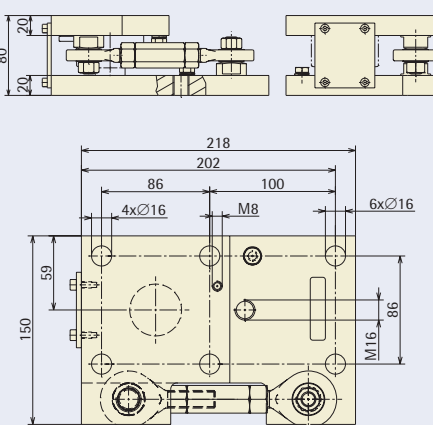
External Dimensions

Model		Material	Destructive Lateral Force (kN)	Permissible Lift Off Protection Force (tf)
General Use	Stainless Steel			
PR 6012/31N	PR 6012/31S	SS plated	5	-
PR 6012/41N	PR 6012/41S	SS plated	20	-
PR 6012/32N	PR 6012/32S	SS plated	5	10
PR 6012/42N	PR 6012/42S	SS plated	20	10

PR 6012/31 N, S



PR 6012/41 N, S



Dimensions in mm

PR6246 Series Tension Type Ultra-High Accuracy 1/12500 Stainless Steel Load Cell (D1 ~ C6)



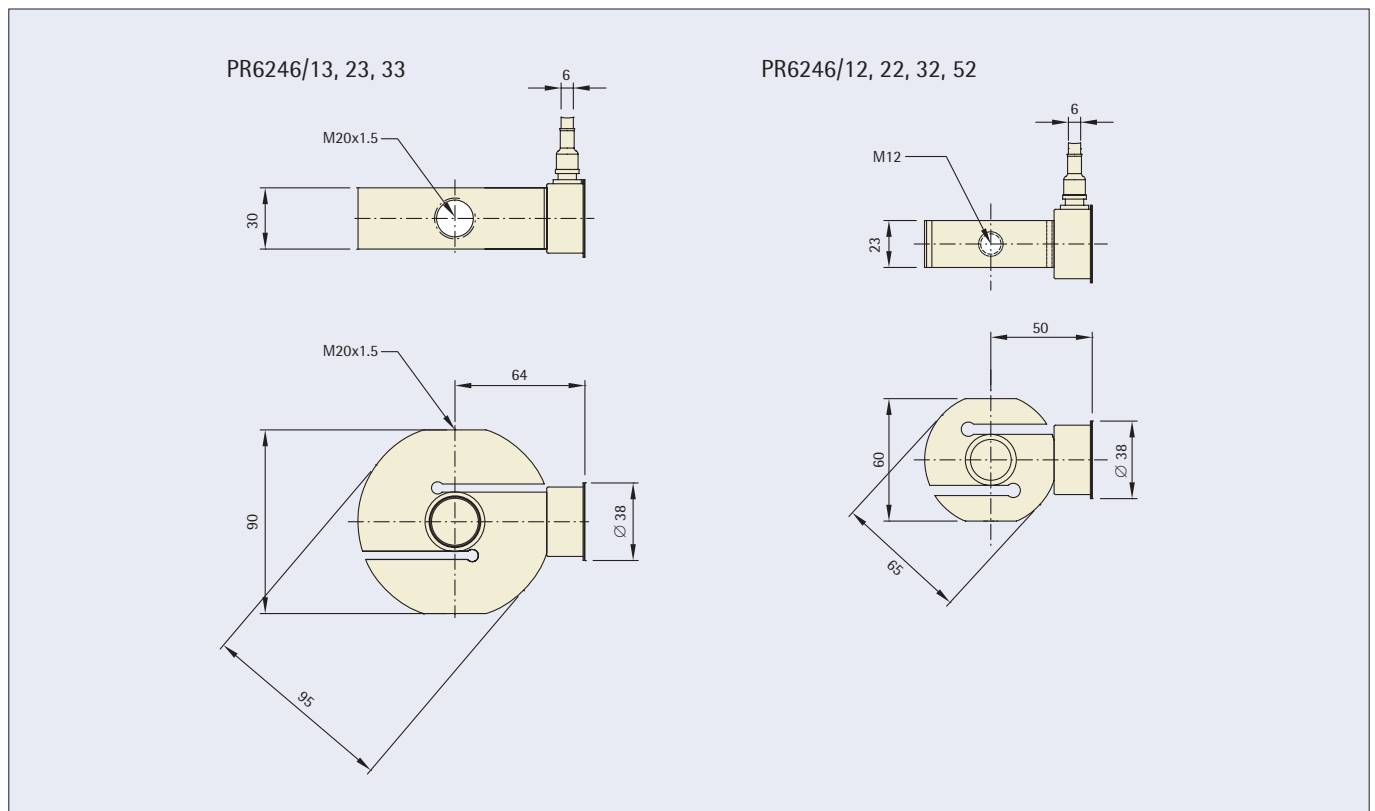
Features

- Stainless steel housing: SUS630 equivalent
- Completely waterproof IP68
- Ultra-high accuracy, C6: 1/12500

Model	Rated Capacity (kg)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6246/12 D1	100	0.7	1.1	22 x 21.5 x 13.5
PR6246/22 D1/C3/C6	200	0.7	1.1	22 x 21.5 x 13.5
PR6246/32 D1/C3/C6	300	0.7	1.1	22 x 21.5 x 13.5
PR6246/52 D1/C3/C6	500	0.7	1.1	22 x 21.5 x 13.5
PR6246/13 D1/C3/C6	1t	1.6	2.0	22 x 21.5 x 13.5
PR6246/23 D1/C3/C6	2t	1.6	2.0	22 x 21.5 x 13.5
PR6246/33 D1/C3/C6	3t	1.6	2.0	22 x 21.5 x 13.5

	Unit	D1	C3	C6
Accuracy class	%	0.04	0.015	0.008
Safe load limit	%	150		
Destructive load	%	> 300		
Rated output	mV/V	2		
Rated output tolerance	%	< 0.25	< 0.07	< 0.07
Non-linearity	%	< 0.03	< 0.01	< 0.01
Temperature effect on Zero	%/10°C	< 0.028	< 0.01	< 0.007
Temperature effect on Span	%/10°C	< 0.03	< 0.01	< 0.005
Input impedance	Ω	650 ± 6		
Output impedance	Ω	610 ± 1	610 ± 0.5	
Nominal supply voltage	V	4 ~ 24		
Nominal ambient temperature range	°C	- 10 ~ + 55		- 10 ~ + 40
Usable ambient temperature range	°C	- 30 ~ + 95		
Cable specification	PTE thermoplastic, 4-core shielded cable length: 5 m / diameter: 6 mm / Cable 4 x 0.35 mm ²			
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray			

External Dimensions



Dimensions in mm

PR6207 Series Beam Type Stainless Steel Load Cell



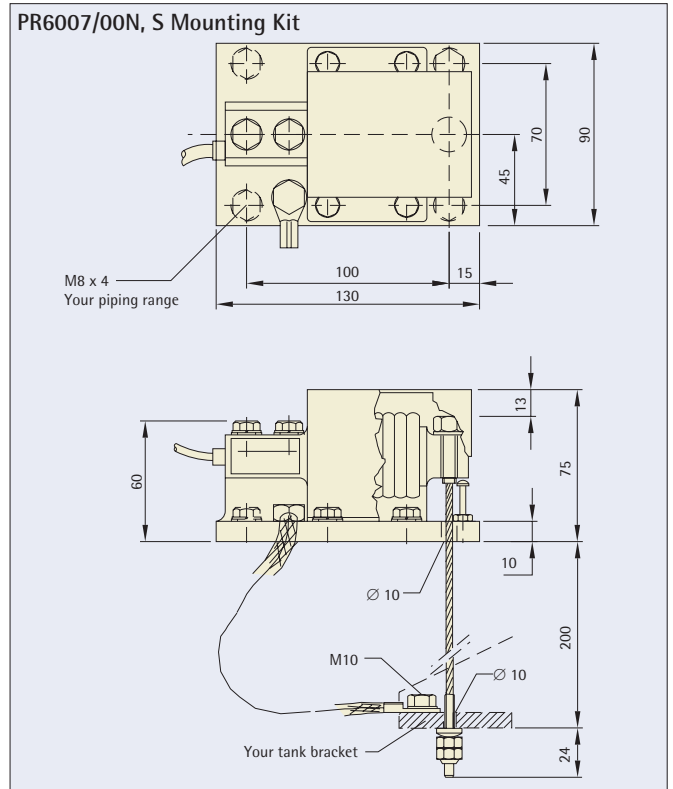
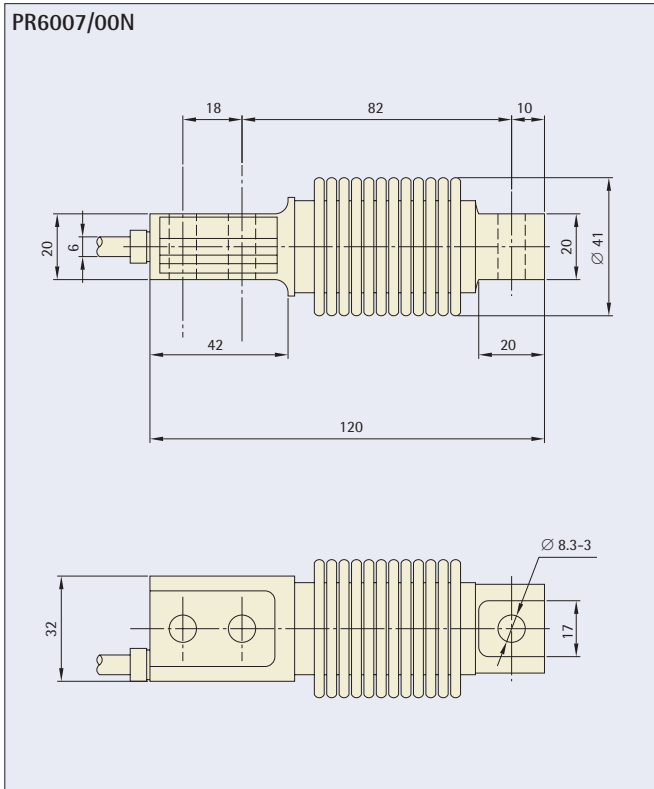
Features

- Stainless steel housing: 1.4122
- Completely waterproof IP67

Model	Rated Capacity (kg)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6207/11 C3	10	0.5	0.9	28 x 16 x 9
PR6207/21 C3	20	0.5	0.9	28 x 16 x 9
PR6207/51 C3	50	0.5	0.9	28 x 16 x 9
PR6207/12 C3	100	0.5	0.9	28 x 16 x 9
PR6207/22 C3	200	0.5	0.9	28 x 16 x 9

	Unit	C3
Accuracy class	%	0.017
Safe load limit	%	150
Destructive load	%	> 300
Rated output	mV/V	2.0
Rated output tolerance	%	< 0.1
Non-linearity	%	< 0.017
Temperature effect on Zero	%/10°C	< 0.013
Temperature effect on Span	%/10°C	< 0.008
Input impedance	Ω	350 ~ 480
Output impedance	Ω	356 ± 0.12
Nominal supply voltage	V	4 ~ 12
Nominal ambient temperature range	°C	- 10 ~ + 70
Usable ambient temperature range	°C	- 30 ~ + 70
Cable specification	PVC, 4-core shielded cable length: 3 m / diameter: 5.4 mm / Cable 4 x 0.34 mm ²	
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray	

External Dimensions



Dimensions in mm

Model		Destructive Lateral Force (tf)	Permissible Lift Off Protection Force (tf)	Package Size L x W x H (cm)	Weight (kg)	
General Use	Stainless Steel				Net	Gross
PR6007/00N	PR6007/00S	—	—	15 x 11 x 9	1.7	2.1

PR6221 Series Truck Scale Load Cell

Rated capacity at 50 t, yet compact with 138.5 mm height. Mounting kit and grounding are available.



Features

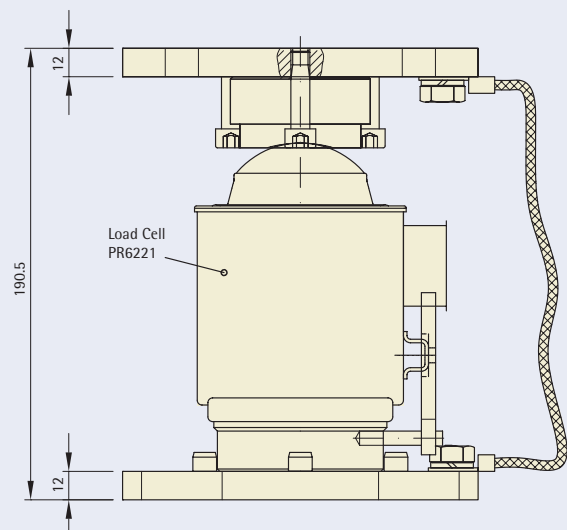
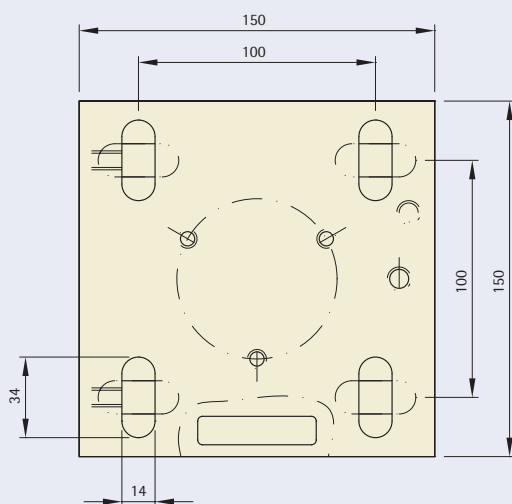
- Stainless steel housing: SUS304 equivalent
- Lightning countermeasures provided
- Large restoration force
- High accuracy: C6 (1/12500) compatible
- Completely waterproof: IP68

Model	Rated Capacity (t)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (mm)
PR6221/12.5tC3	12.5	5.1	5.9	240 x 240 x 155
PR6221/20tC3	20	5.1	5.9	240 x 240 x 155
PR6221/25tC3	25	5.1	5.9	240 x 240 x 155
PR6221/30tC3	30	5.5	6.3	240 x 240 x 155
PR6221/50tC3	50	5.5	6.3	240 x 240 x 155
PR6221/60tC3	60	6	6.8	240 x 240 x 155
PR6221/75tC3	75	6.5	7.3	240 x 240 x 155

	Unit	12.5 t	20 t	25 t	30 t	50 t	60 t	75 t
Load cell rank		C3						
Accuracy class	%	0.015						
Safe load limit	t	12.5	40	37.5	60	75	75	75
Destructive load	%	75	100	75	150	150	150	150
Rated output	mV/V	1	1	2	1	2	2.4	3
Rated output tolerance	%	< 0.07						
Non-linearity	%	< 0.01						
Temperature effect on Zero	%/10°C	< 0.01						
Temperature effect on Span	%/10°C	< 0.01						
Input impedance	Ω	1080 ± 10						
Output impedance	Ω	1010 ± 2		1010 ± 1				
Nominal supply voltage	V	4 ~ 24						
Nominal ambient temperature range	°C	- 10 ~ + 55						
Usable ambient temperature range	°C	- 30 ~ + 95						
Cable specification	Polyethylene, 4-core shielded cable, length: 12 m Diameter: 6 mm / cable 4 x 0.35 mm ²							
Wiring specification	Applied voltage + red / - blue, output signal + green / - gray							

External Dimensions

PR6021/03N



Dimensions in mm

PR6224 Series Truck Scale Digital Load Cell Pendeo® Truck

The load status of each load cell can be grasped in real time, by converting the output signal of the high accuracy load cell into a digital signal for output.

PR6224 Ultra-High Accuracy Digital Load Cell Pendeo® Truck



Model	Rated Capacity (t)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6224/25t C3/C6	25	4.0	4.9	24 x 24.5 x 15.5
PR6224/50t C3/C6	50	4.2	5.1	24 x 24.5 x 15.5

	Unit	C3	C6
Accuracy class	%	0.015	0.008
Safe load limit	%	200	150
Destructive load	%	300	300
Sensitivity	Digits	200,000 (25 t : 400,000)	
Rated output tolerance	%	< 0.07	< 0.07
Non-linearity	%	< 0.01	< 0.01
Temperature effect on Zero	%/10 °C	< 0.01	< 0.007
Temperature effect on Span	%/10 °C	< 0.01	< 0.005
Nominal supply voltage	V	20 ~ 28	
Nominal ambient temperature range	°C	-10 ~ +40	
Usable ambient temperature range	°C	-30 ~ +70	
Cable specification		PTE thermoplastic, 4-core shielded cable ≤ 10 t: 5 m, ≥ 25 t: 12 m	
Wiring specification		Applied voltage + red / - blue, output signal + green / - gray	

Features

- Stainless steel housing with completely sealed structure (IP68/IP69K)
- Accuracy class: C3 0.015% / C6 0.008%
- Rated output:
200,000 digits (25 t: 400,000)
- 2-wire RS485 communication allows connection of up to 8 units
- Connectable devices
PR5900 Maxxis 5 Process Controller
PR5410 Process Indicator

Example of Truck Scale Weighing System



PR6204 Series Process Digital Load Cell Pendeo® Process

The load status of each load cell can be grasped in real time, by converting the output signal of the high accuracy load cell into a digital signal for output.

PR6204 Ultra-High Accuracy Digital Load Cell Pendeo® Process



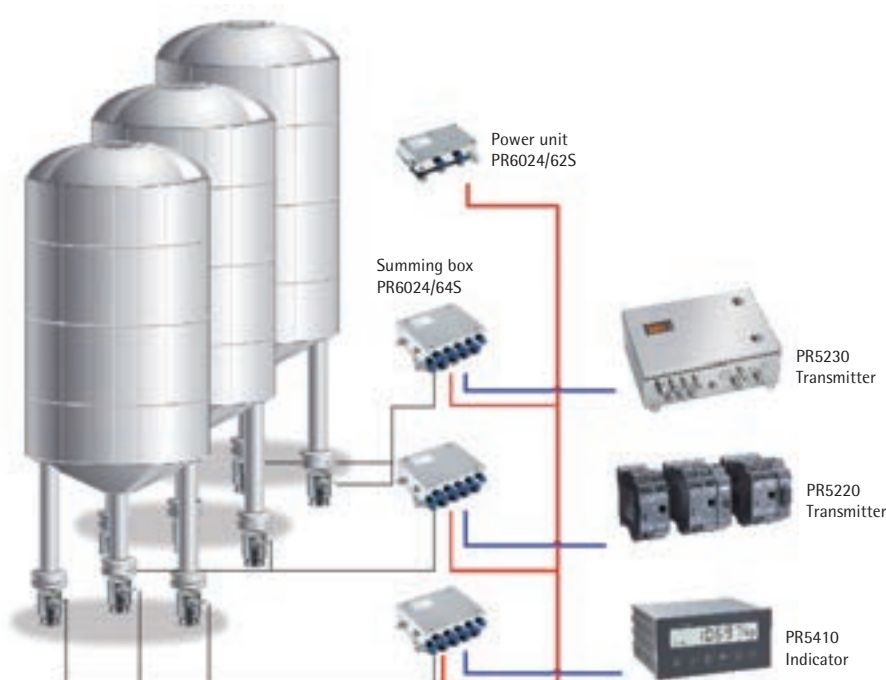
Model	Rated Capacity (t)	Net Weight (kg)	Gross Weight (kg)	Packaged Size (cm)
PR6204/2t C3	2	1.9	2.8	24 x 24.5 x 15.5
PR6204/5t C3	5	2.0	2.9	24 x 24.5 x 15.5
PR6204/10t C3	10	2.5	3.4	24 x 24.5 x 15.5
PR6204/25t C3/C6	25	4.0	4.9	24 x 24.5 x 15.5
PR6204/50t C3/C6	50	4.2	5.1	24 x 24.5 x 15.5

	Unit	C3	C6
Accuracy class	%	0.015	0.008
Safe load limit	%	2 - 10 t : 200 25/50 t : 150	150
Destructive load	%	2 - 10 t : 500 25/50 t : 300	300
Sensitivity	Digits	200,000 (25 t : 400,000)	
Rated output tolerance	%	< 0.07	< 0.07
Non-linearity	%	< 0.01	< 0.01
Temperature effect on Zero	%/10 °C	< 0.01	< 0.007
Temperature effect on Span	%/10 °C	< 0.01	< 0.005
Nominal supply voltage	V	16 ~ 28	
Nominal ambient temperature range	°C	-10 ~ +40	
Usable ambient temperature range	°C	-30 ~ +70	
Cable specification		PTE thermoplastic, 4-core shielded cable ≤ 10 t: 5 m, ≥ 25 t: 12 m	
Wiring specification		Applied voltage + red / - blue, output signal + green / - gray	

Features

- Stainless steel housing with completely sealed structure (IP68/IP69K)
- Accuracy class:
C3 0.015% / C6 0.008% (25 t, 50 t)
- Rated output:
200,000 digits (25 t: 400,000)
- 2-wire RS485 communication allows connection of up to 8 units
- Connectable devices
PR5220/5230 Transmitter
PR5410 Process Indicator
PR5900 Maxxis 5 Process Controller

Example of Process System



PR5900 Maxxis 5 Process Controller

A weighing terminal with many applications

- Automatic unbalanced load compensation function
- Automatic compensation function if load cells fail
- Upper limit setting function of individual load cell



Digital Assistant Technology

The digital load cell system recommended here is technology that monitors the signal from each load cell and creates an environment that allows use of the weighing system under more comfortable conditions.

Intrinsically Safe Explosion-Proof System

Both our tank scales and platform scales adopt intrinsically safe explosion-proof systems.



Intrinsically safe interface
PR1626/60



Explosion-proof display CAIXS2

Intrinsically Safe Explosion-Proof Features

- Sparking energy is not supplied to hazardous areas.
Extremely safe, as even if a cable were to be cut in a hazardous area, there would be no sparking energy.
- Weighing system design is very simple.
- Keeps cost low compared to pressure-resistant explosion-proof systems.

Devices Used

- Load cell dedicated intrinsically safe explosion-proof interface
(PR1626/60 Industrial Safety Technology Association approval: Ex ib IIC T6)

Intrinsically safe explosion-proof interface developed especially for load cells.

Load cell output changes due to temperature effects are minimal, enabling high accuracy measurement.

- Desktop display (CAIXS2 international standard IEC Ex approved)

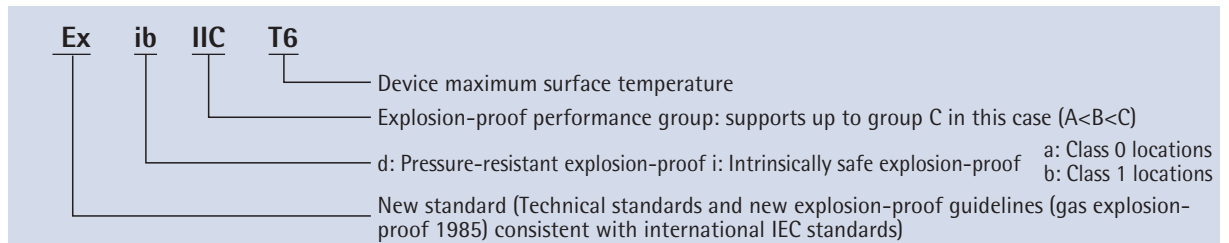
Display with stainless steel housing that can be installed in hazardous areas.

The use of a pressure-resistant explosion-proof power unit realizes a maximum resolution of 1/30,000, as there are no barrier effects.

Ideal for installation within cleanrooms in explosion proof areas.

(Stainless steel housing / waterproof structure)

Example of Explosion-Proof Class Display



Class	T1			T2			T3		T4	T5	T6
	Over 450°C			≤ 450			≤ 300		≤ 200	≤ 135	≤ 100
IIA	Acetonitrile	O-xylene	Toluene	2-aminoethanol	Diethylamine	Propylamine	Ethyl acetoacetate	Nonanol	Acetaldehyde		Ethyl nitrite
	Acetone	O-cresol	Naphthalene	Ethanol	Cyclohexanone	Propylene	Ethanethiol	Nonane	Trimethylamine		
	Aniline	Chlorobenzene	Pyridine	Ethylbenzene	Cyclopentane	2-heptanone	Ethyl cyclobutane	1-hexanol			
	Ammonia	Acetic acid	Phenol	Acetyl chloride	1,2-dichloroethane	Ethyl methacrylate	Ethyl cyclohexane	Hexane			
	Carbon monoxide	Ethyl acetate	Propane	Vinyl chloride	Dimethylamine	Methyl methacrylate	Ethyl cyclopentane	Heptane			
	Ethane	Methyl acetate	Propyl methyl ketone	Ethyl formate	N,N-dimethylaniline	Methylamine	Butyl chloride	1-pentanol			
	Ethyl methyl ketone	Diacetone alcohol	Benzene	Methyl formate	p-Cymene		1-octanol	Pentane			
	Allyl chloride	1,1-dichloroethylene	Benzotrifluoride	Cumene	Thiophene		Octane	Methyl cyclohexanol			
	Ethyl chloride	1,2-dichloropropane	Methanol	2-chloroethanol	Nitroethane		Cyclohexanol	Methyl cyclohexane			
	Propyl chloride	O-dichlorobenzene	Methane	Vinyl acetate	Nitromethane		Cyclohexane	Methyl cyclopentane			
	Benzene chloride	Dichloromethane	α-methylstyrene	Butyl acetate	1-butanol		Cyclohexylamine	Gasoline			
	Methyl chloride	Ethyl bromide		Propyl acetate	Butane		Dipropyl ether	Kerosene			
	Propyl chloride	Styrene		Pentyl acetate	N-butylamine		Butyl bromide	Coal tar naphtha			
	Benzene chloride	1,2,4-trimethylbenzene		Diaminoethane	Butyl methyl ketone		trans-Decalhydronaphthalene	Petroleum naphtha			
	Methyl chloride	o-Toluidine		2-diethylaminoethanol	1-propanol		Decane	Turpentine oil			
IIB	Acrylonitrile			Ethyl acrylate	Ethylene	1,4-dioxane	Acrylic aldehyde	Isopropyl nitrate	Diethylether		
	Hydrogen cyanide			Methyl acrylate	Ethylene oxide	1,3,5-trioxane	2-ethoxyethanol	Tetrahydrofuran	Dibutyl ether		
	Cyclopropane			Acetylacetone	Epichlorohydrin	1,3-butadiene	Crotonaldehyde	Tetrahydrofurfuryl alcohol	Tetrafluoroethylene		
				Ethyl methyl ether	1,2-epoxypropane	Furan	Dimethyl ether				
IIC	Hydrogen	Coke oven gas		Acetylene						Carbon disulfide	Ethyl nitrate

PR1626/60, 61 Intrinsically Safe Interface

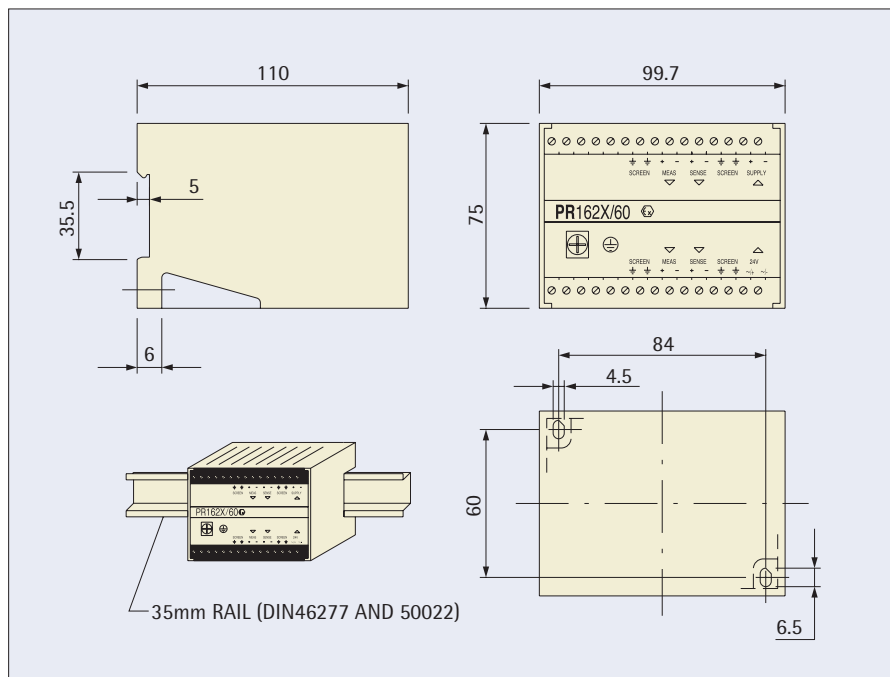


Features (PR1626/60, 61)

- Up to 8 load cells with 650 Ω can be connected.
- Intrinsically safe explosion-proof:
Ex ib IIC T6 (Industrial Safety Technology Association approved)
PTB02A TEX2056
II (2) G [Ex ib] IIB/C

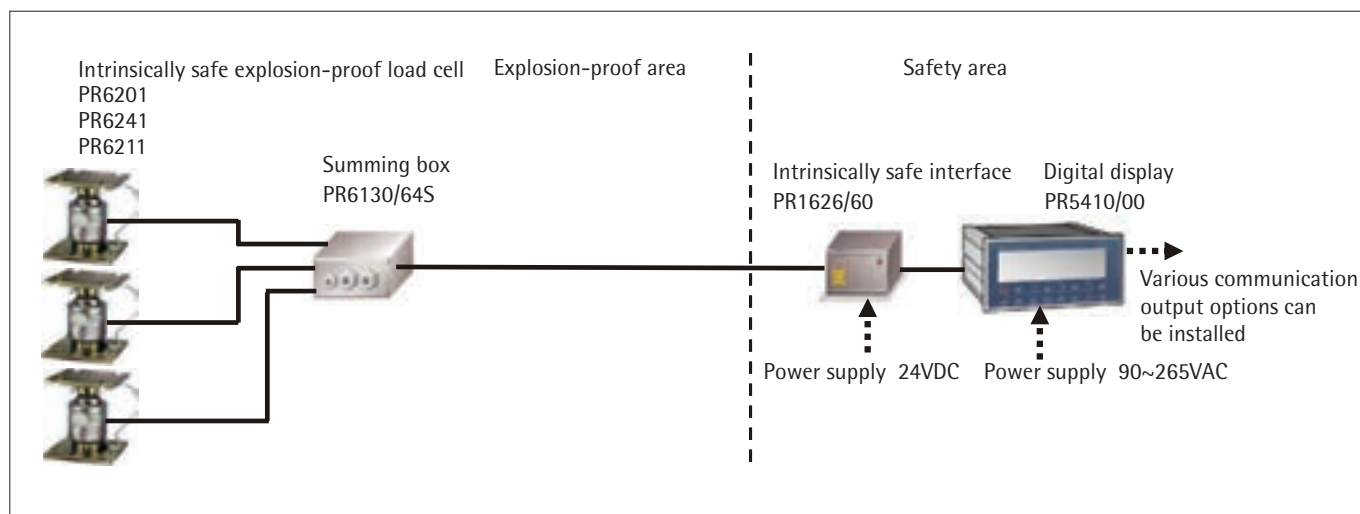
Specifications	PR1626/60 for PR6203, 6241, 6211	PR1626/61 for Combiics (EX) series, IF series
Load cell supply voltage	DC12 V (80 mA or less)	DC7.5 V (92 mA or less)
Load (min.)	150 Ω	80 Ω
Measurement voltage	0 mV ~ 40 mV	
Power supply	DC24 V (18 ~ 30 V)	
Operating temperature range	- 10 °C ~ + 55 °C	
Protection class	IP20	
Weight/packaged size	0.5 kg (net) / 1 kg (packaged) 270 * 270 * 200 (mm)	

External Dimensions



Dimensions in mm

Digital Indicator



Weight Controller Maxxis 5



The right solution for all of these applications

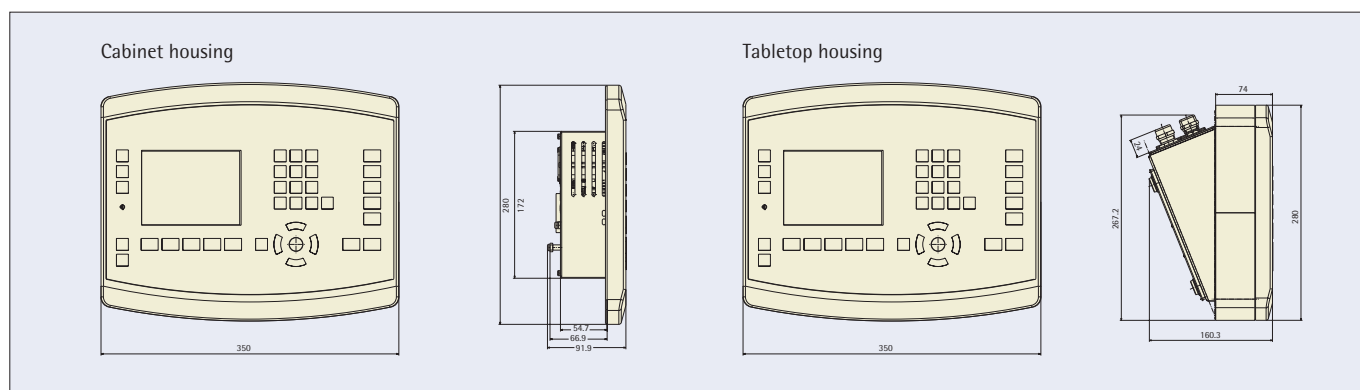


Features

- Programmable Process Controller for the automated control of weighing processes with up to four scales.
- Simple integration into automation systems.
- W&M approved (OIML) with 6.000 e, Class III
- Version with ATEX approval for hazardous area
- Standard with Ethernet TCP/IP, Modbus TCP, RS-232 and RS-485 interfaces, USB port, SD Card, 4 digital I/O.
- Ethernet TCP/IP incl. Modbus TCP for PC connection via OPC server and for configuration with web browser.
- Diverse options for extending the functionality by integration of various option cards.
- Various housings

Parameter	Description
Housing	Type: housing for cabinet assembly, table-top housing, housing with bracket for wall mounting, blackbox
	IP protection Class: Cabinet housing: IP65, rear panel IP20, Blackbox housing: IP20, Table-top housing: IP65, Wall housing: IP65
	Material: Stainless steel
Power supply	AC 100 - 240 V $\pm$ 10%, 50 - 60 Hz (standard), DC 24 V + 20 / - 10% (optioned)
Power consumption	Max. 20 W
Display	TFT colour graphic display, 5.7" at 320 * 240 pixels, 7 digit weight display, The possible units of weight are t, kg, g, mg, lb and oz, 1 status LED shows the "shutdown" status
Keys	Membrane keypad, 36 keys
Languages	Integrated languages: German, English, French
	Character sets: ASCII, Latin1, Latin-ext A, Cyrillic, Hiragana, Katakana, CJK (Simplified Chinese only)
Standard interfaces	USB interface, SD Card, RS-232, RS-485, Ethernet TCP/IP, Digital I/O
Optioned interfaces	A/D converter, RS-485, RS-232, Analogue I/O, Digital I/O, Profibus DP, DeviceNet, Profinet, Ethernet/IP,
Ambient temperature range	Operation: - 10 to + 50 °C, Storage: - 20 to + 70 °C
Packaging dimensions	450 * 410 * 240mm
Weight	Cabinet and blackbox housing: 3.0 kg (Net), 4.0 kg (Gross)
	Table-top housing and wall housing: 5.7 kg (Net), 6.7 kg (Gross)
Certificates	CE, OIML R76 OIML R51, ATEX zone 2/22, ATEX zone 1/21, FM class I, II, III div.2, IECEx, TRCU 004
Application software	Basic (standard), Phase, Count, Batching, Truck and IBC (Optioned)

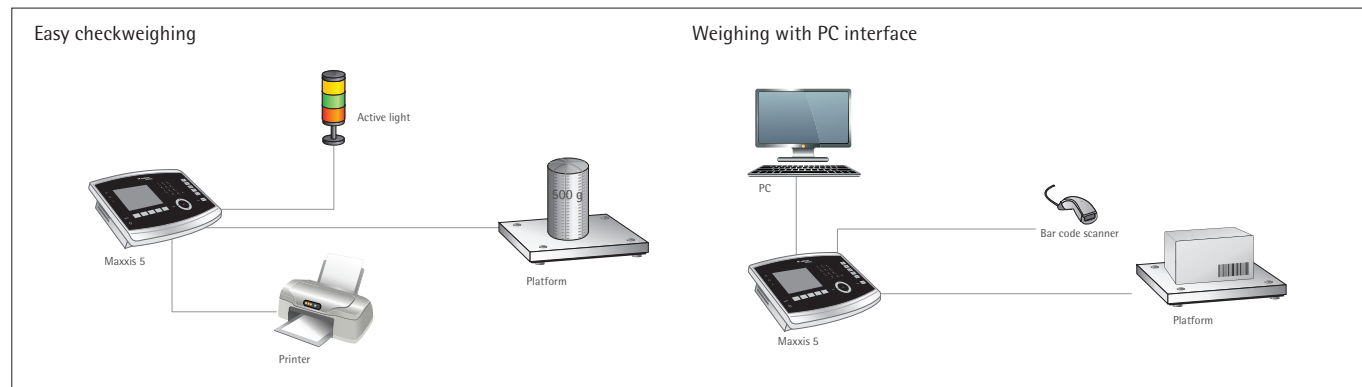
External Dimensions



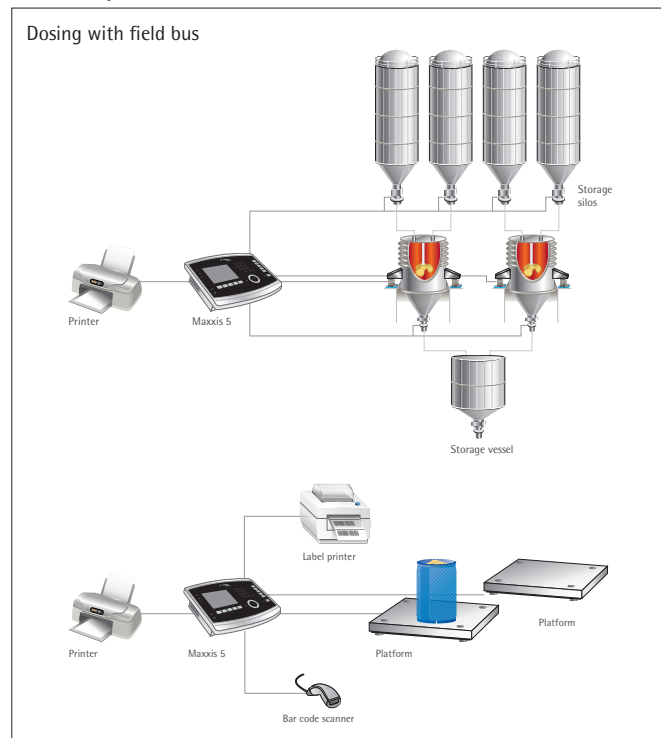
Dimensions in mm

Example of Application Software

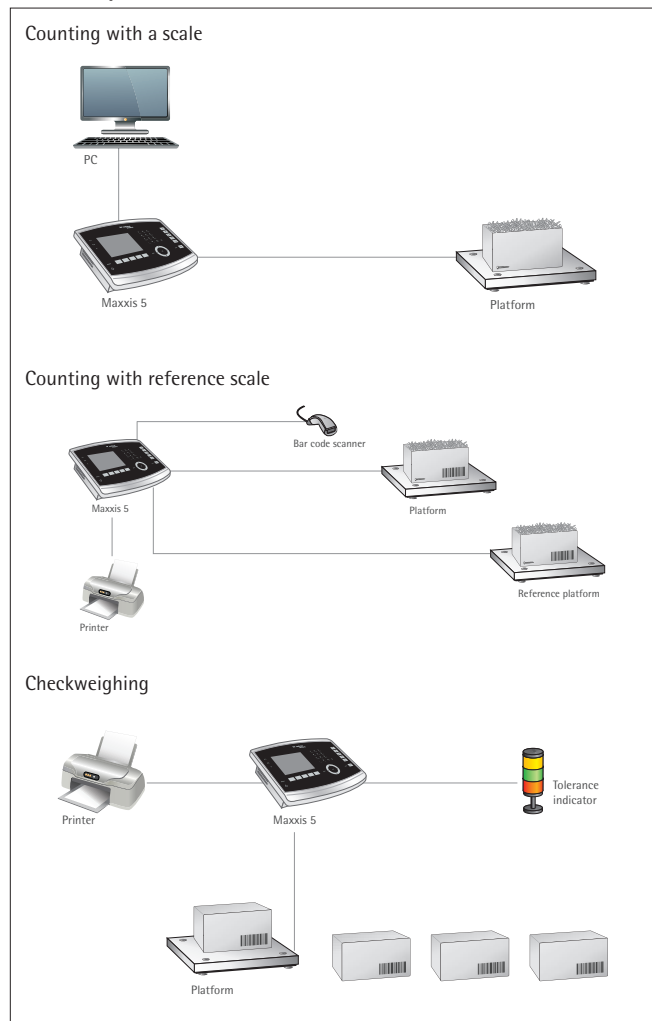
Basic (Standard)



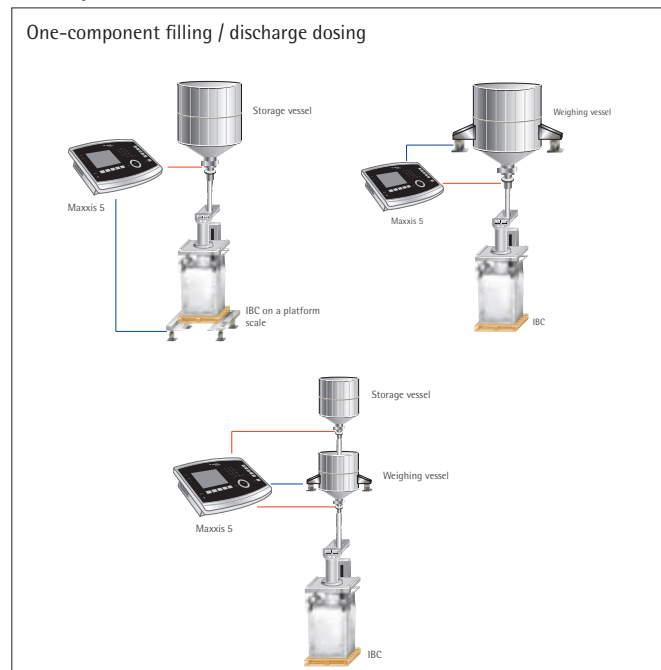
Batch (Optional)



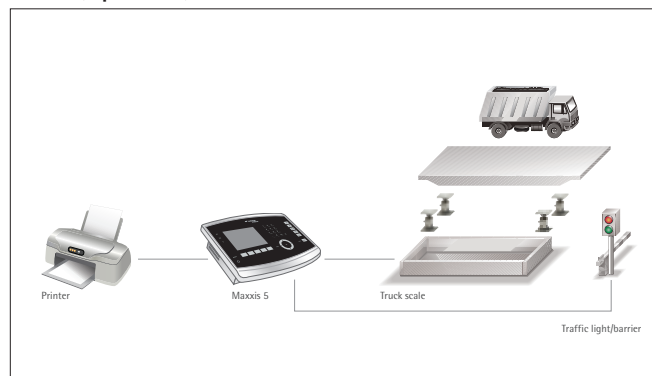
Count (Optional)



IBC (Optional)



Truck (Optional)



Weight Controller Maxxis 4



The right solution for all of these applications

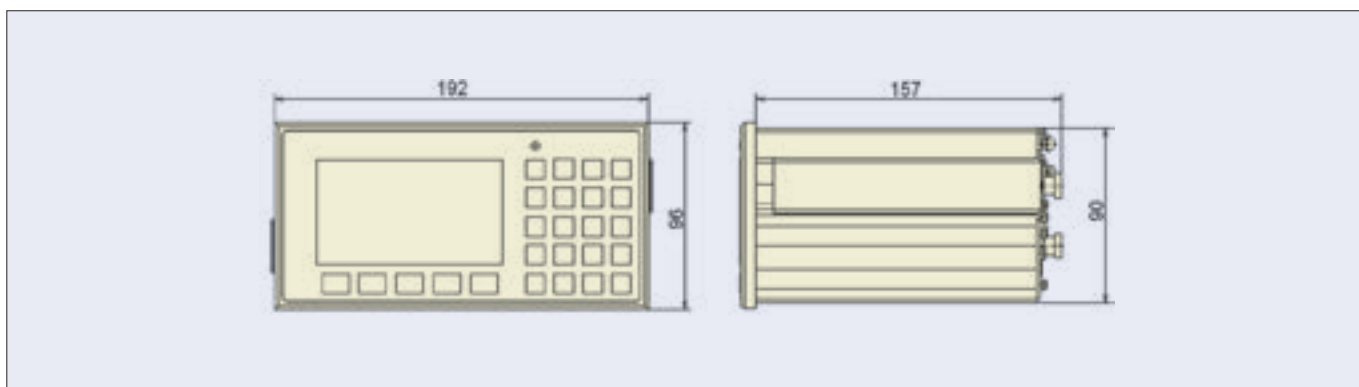


Features

- Programmable Process Controller for the automated control of weighing processes with one scale.
- Simple integration into automation systems.
- Ethernet TCP/IP incl. Modbus TCP for PC connection via OPC Server and configuration via web browser.
- RS-232 interface, USB port, SD card as standard features.
- Diverse options for extending the functionality by integration of various option cards.

Parameter	Description
Housing	Type: Plug-in housing for switch cabinet assembly
	IP protection Class: IP20 (front of device: IP65)
	Material: Aluminium
Dimensions	192 * 96 * 146 mm
Power supply	AC 100 - 240 V $\pm$ 10%, 50 - 60 Hz (standard), DC 24 V + 20 / - 10% (optioned)
Power consumption	Max. 14 W
Display	TFT colour graphic display, 4.3" at 480 * 272 pixels, 7 digit weight display, The possible units of weight are t, kg, g, mg, lb and oz, 1 status LED shows the "shutdown" status
Keys	Membrane keypad, 25 keys
Languages	Integrated languages: German, English, French
	Character sets: ASCII, Latin1, Latin-ext A, Cyrillic, Hiragana, Katakana, CJK (Simplified Chinese only)
Standard interfaces	USB interface, SD Card, RS-232, Ethernet TCP/IP
Optioned interfaces	A/D converter, RS-485, RS-232, analogue I/O, Digital I/O, Profibus DP, DeviceNet, CC-Link, Profinet, Ethernet/IP,
Ambient temperature range	Operation: - 10 to + 50 °C, Storage: - 20 to + 70 °C
Packaging dimensions	291 * 331 * 160 mm
Weight	Net: 2.2 kg, Gross: 3.1 kg
Certificates	CE, OIML R76
Application software	Basic (standard), Phase, Batching and IBC (Optioned)

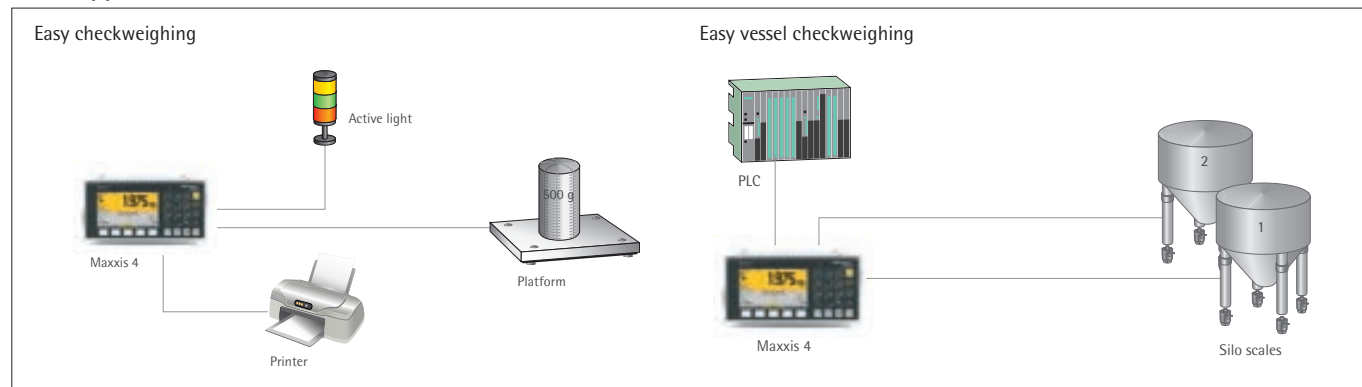
External Dimensions



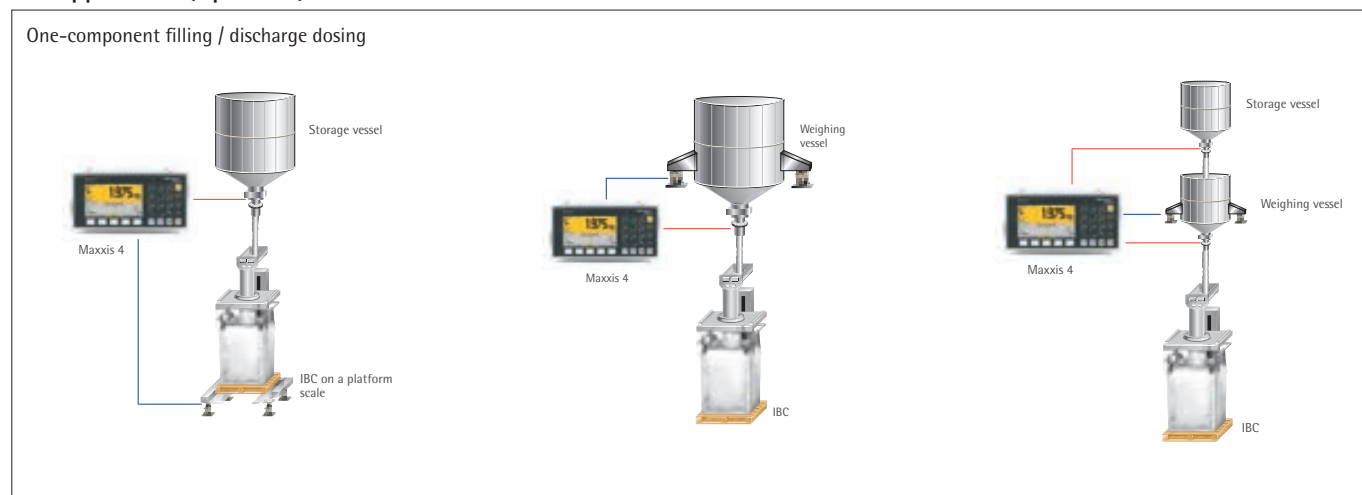
Dimensions in mm

Example of Application Software

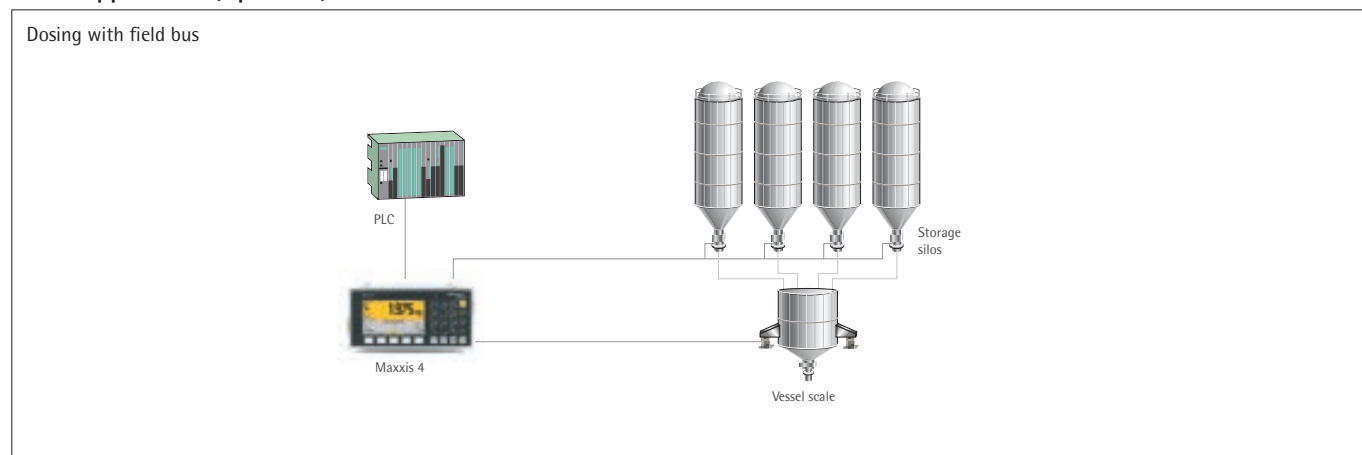
Basic Application (Standard)



IBC Application (Optional)



Batch Application (Optional)



PR5410 Process Indicator

PR5410 is a weighing module that achieves 10000e Class III level accuracy.

High speed conversion enables response times from 10 ms. As well, a 10/100 Mbps/s LAN adapter is built in.

Load cell, control input/output optocoupler, LAN adapter connector and RS232C interfaces are mounted on the back panel.

Enables actual load adjustment using weights, calibration of numerical input in mV/V, and load cell data input (smart calibration).



Specifications	
Non-linearity	< 0.003 %
Load cell supply voltage	12 V, with remote sensing function Max. 6 load cells with 600 Ω (min. 75 Ω)
Temperature influence	Zero: < 0.05 μ V/KRT1, Span: < +/- 2.5 ppm/K
Input signal	0 ~ 36 mV
Measuring time	5 ms ~ 1600 ms
Display	6-digit, character height 18 mm, white backlight, black text
Power supply	85 V ~ 265 VAC 50/60 Hz
Power consumption	13 VA/11 W (max.)
Operating temperature	- 10°C ~ + 50°C
Storage temperature	- 20°C ~ + 70°C
Protection Class	Front panel: IP65, housing: IP30
External dimensions	W 192 x H 96 x D 160 (mm) Packaged size 330 x 300 x 180 (mm)
Weight	Net: 1.45 kg, gross: 2.3 kg

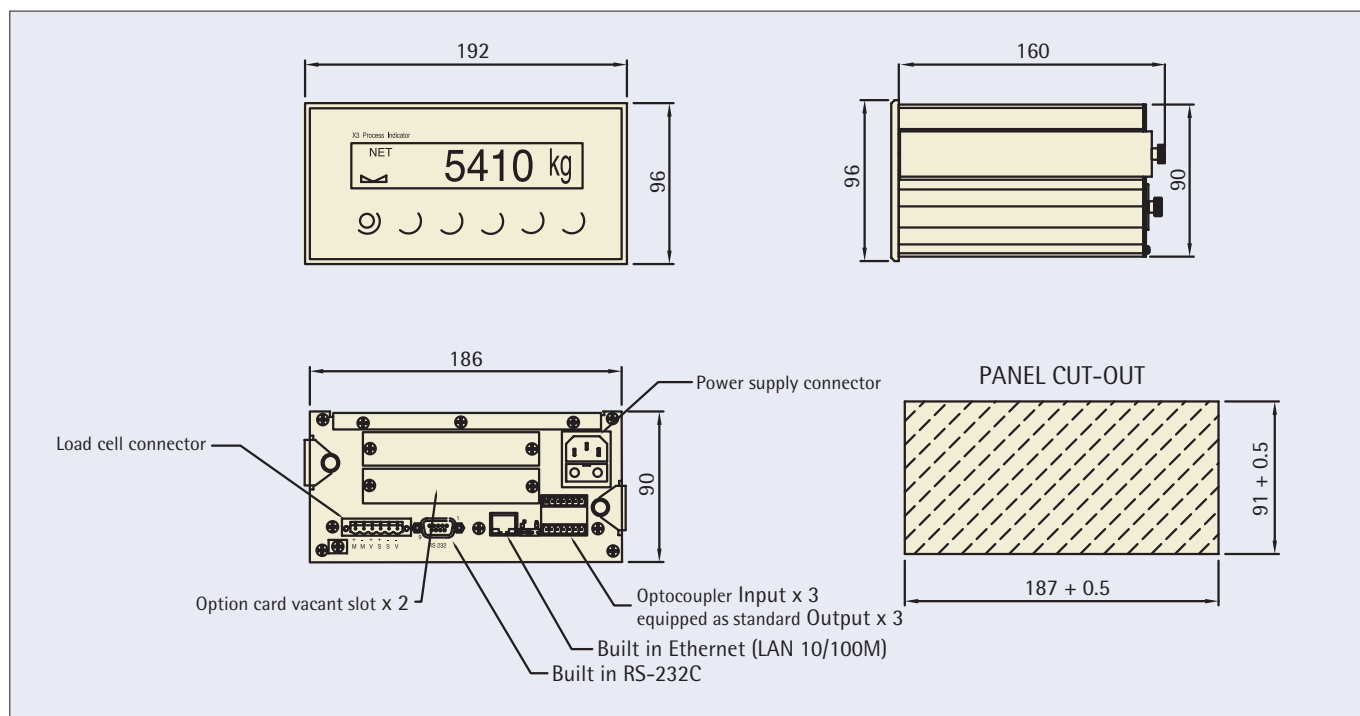
Features

- Large display (height 18 mm), clearly visible backlit LCD display
- OIML R76 10,000e
- Internal resolution: 1/4,000,000

Options

PR5510/04	Serial RS485/422 + RS232C
PR5510/07	Analog output (current) 0/4 ~ 20 mA max 500 Ω
PR5510/09	BCD output (open collector)
PR5510/12	In 6/Out 12 output
PR5510/14	Ethernet Modbus TCP/IP
PR1721/31	Profibus-DP
PR1721/32	Interbus-S
PR1721/34	DeviceNet
PR1721/35	CC-Link

External Dimensions



Dimensions in mm

PR5230 Stainless Steel Loadcell Cable Connection Board (Summing box Option Built-In)



Features

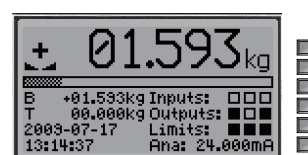
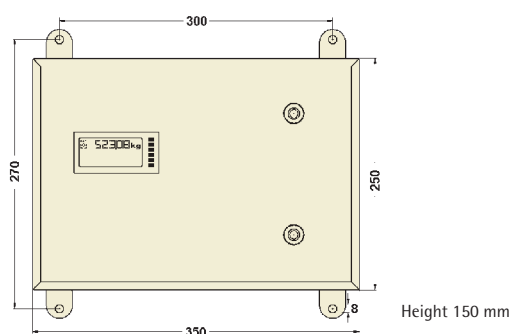
- Stainless steel housing: IP66
- Ethernet/Modbus TCP service interface equipped as standard (calibration/setting enabled via the service interface)
- RoHS compliant
- Input/output 3 contacts equipped as standard

Options

PR5230/22: Cable arithmetic board (max. 4 contacts)
 PR5230/06: Analog specification
 PR1721/41: Profibus-DP
 PR1721/42: Interbus-S
 PR1721/44: DeviceNet
 PR1721/45: CC-Link
 PR1721/46: Profinet
 PR1721/47: EtherNet/IP

Specifications	
Calibration approval	10000e, Class III
Load Cells	Max. 6 load cells with 650 Ω
Applied voltage	12 VDC (= 75 Ω), 6-wire type with remote sensing function
Temperature effect	Zero: 0.05 μ V/K RTI, Span: $\pm$ 2.5 ppm/K
Sensitivity	0.2 μ V/d
Zero point adjustment range	0 ~ 36 mV
Measuring time	Δ - Σ converter; conversion speed: 5 ms - 1600 ms
Internal resolution	Against approx. 4,800,000 div (36 mV)
Analog output	Resolution 16 bit 0/4 - 20 mADC, max. load resistance 500 Ω or less
Digital input	3-contact, 30 V 10 mA (zero reset / tare subtraction ON / tare subtraction OFF)
Digital output	3-contact, 30 V 30 mA (ADU error / tare subtraction active / limited)
Display status	Status LEDs *Signal operation *Error status
General specifications	
Power supply (allowable range)	90 ~ 265 VAC, 50/60 Hz or 24 VDC $\pm$ 10%
Power consumption	AC: 16 VA, DC: 12 W
Weight	1.45 kg
Operating temperature range	- 10°C ~ +50°C
External dimensions (mm)	350 x 250 x 120

External Dimensions



LED Display
Display contents can be configured

PR5220 Series Ethernet Transmitter



Features

- TCP/IP connection, calibration and setting can be configured via PC
- High internal resolution: 4,800,000
- External display 10,000e (OIMLR76 compliant)
- High accuracy analog output, 0/4 - 20 mA
- RS485/422 outputs available
- 24 VDC power supply
- Waterproof IP20, DIN rail mountable

Models

PR5220/00: Ethernet
 PR5220/01: Ethernet + Profibus-DS
 PR5220/04: Ethernet + DeviceNet
 PR5220/06: Ethernet + ProfiNet
 PR5220/07: Ethernet + EtherNet/IP

Specifications	
Non-linear	10,000e (OIMLR76 compliant), mini 0.5 μ V/e
Load cell supply voltage	12 V, with remote sensing function Max. 6 load cells with 600 Ω (min.75 Ω)
Temperature effect	Zero: < 0.02 μ V/K RTI, Span: < +/- 2 ppm/K
Input signal	0 ~ 36 mV
Measuring time	5 ms ~ 1600 ms
Control input	Input: Zero, tare subtraction, isolation, 30 VDC max, 10 mA max
Power supply	24 VDC + 10%/ - 15%
Power consumption	8.5 W (max.)
Operating temperature	-10°C ~ +50°C, W&M: -10°C ~ +40°C
Storage temperature	- 20°C ~ + 70°C
Protection Class	Housing: IP20
Electrical noise countermeasures	EN 61000-4-3, 80 MHz to 1 GHz, 10 V/m compliant
Analog output	0/4 - 20 mA, internal resolution 16-bit, usable width: 0.5 μ A, 500 Ω max
External dimensions	/00: 99 x 116 x 45 (mm), 01/04: 99 x 116 x 68 (mm) Packaged size 240 x 160 x 90 (mm)
Weight	00/net: 0.3 kg, 01/04: 0.35 kg (packaged) 0.5 kg

IP address can be set via automatic IP, DHCP server, or manually.

PR6130/34S / 64S Stainless Steel Summing Box

Up to 4 load cell units can be connected.
Intrinsically safe explosion-proof
specification: PR6130/64S

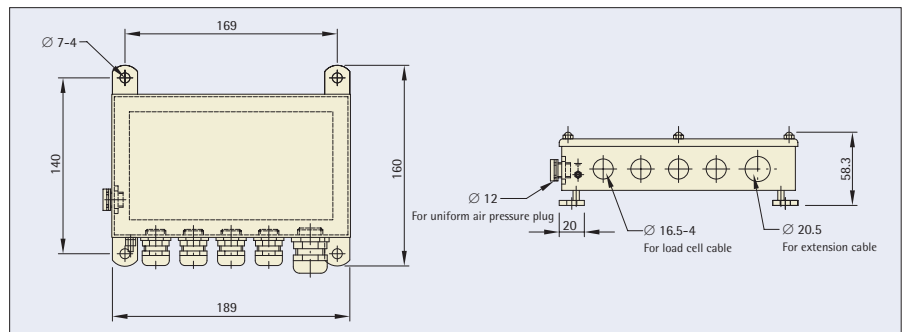


Features

- No problems even if jet spray adheres to the board surface.
- Flame arrestor equipped as standard.

Specifications	
Number of load cells	4
Protection Class	IP68/IP69K
Material	Stainless steel (AISI316L)
Surface	Electro-polished finish
Operating temperature	- 30°C ~ + 60°C
Storage temperature	- 40°C ~ + 70°C
Mounting direction	Load cell cable output should be the bottom side
Packaged size	260 x 180 x 70 mm
Product weight	1.6 kg (packaged 1.7 kg)
Accessories	Load cell cable gland (M12) x 4 pcs
	Indicator cable gland (M20: 6-12 mm) x 1
	Indicator cable gland (M20: 9-13 mm) x 1
	* PR6133/64S only
	Uniform atmospheric pressure plug x 1

External Dimensions



Dimensions in mm

Load Cell Principles

Within the load cell, strain gages are adhered as part of a Wheatstone bridge together with a flexural piece of special heat-treated steel, and converts the "strain" to electrical output in proportion to the force applied to the flexural body. The "strain" of the load cell is designed to be $\delta L/L = 2,000 \times 10^{-6}$ (or $4,000 \times 10^{-6}$) when the rated load is applied ($\delta L/L \approx \delta D/D$). The output of the Wheatstone bridge is proportional to the "strain" and supply voltage, designed for output of 1 mV/V (or 2 mV/V) when the "strain" is $2,000 \times 10^{-6}$ (or $4,000 \times 10^{-6}$).

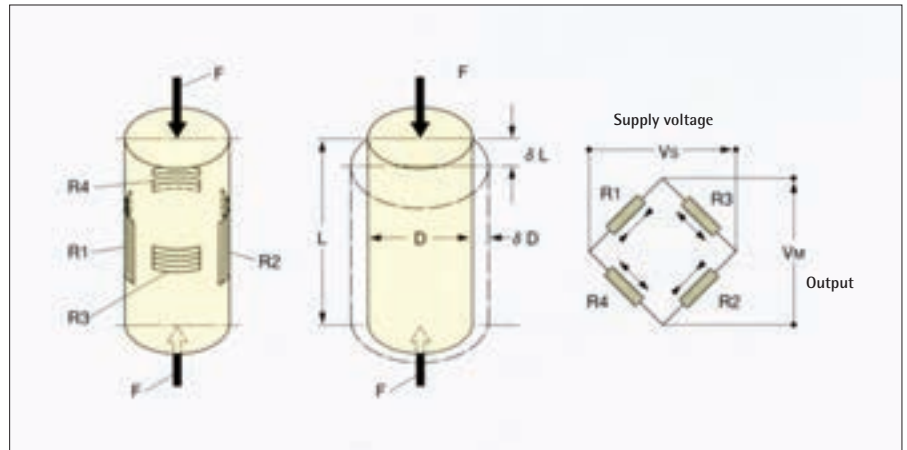
Accordingly, the rated load output for

1 mV/V rated load cell is

$$V_m (\text{mV}) = 1 (\text{mV/V}) \times V_s (\text{V})$$

and that for 2 mV/V rated load cell is

$$V_m (\text{mV}) = 2 (\text{mV/V}) \times V_s (\text{V}).$$

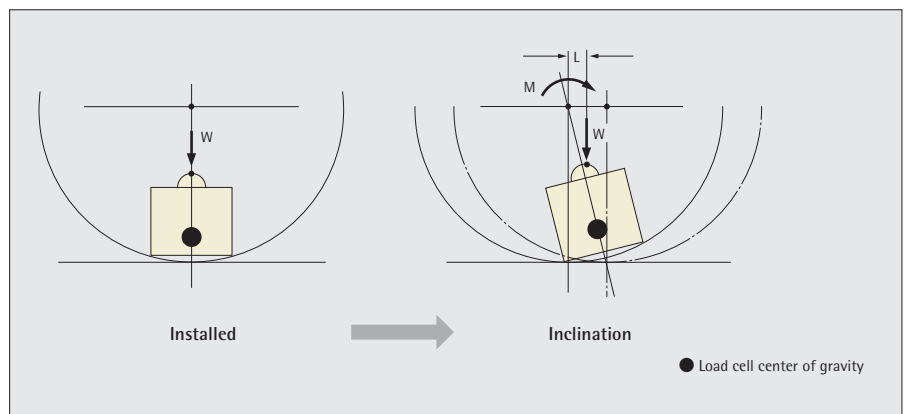


Load Cell Characteristics

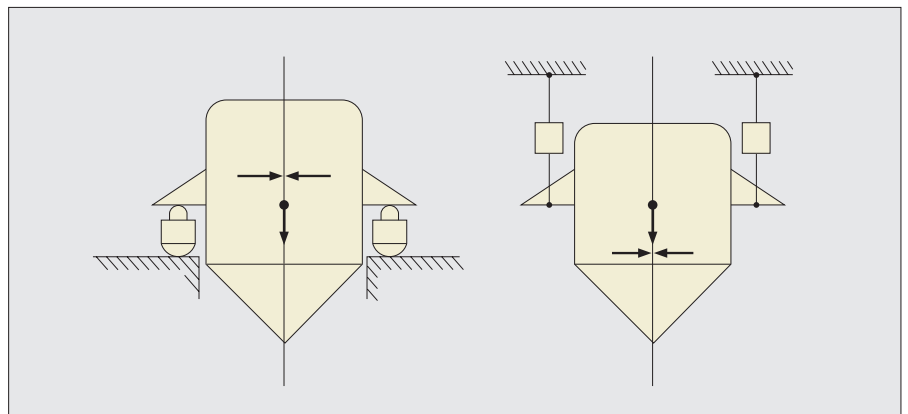
Load Cell Automatic Centering Mechanism (Compression Type) Tumbler Principle

1. Low center of gravity
2. Spherical contact (bottom)
3. Max. 3% restoration force

The ultra-low center of gravity provides high restoration force via the tumbler principle. Load cells rated between 50 tons and 100 tons have a restoration force of 3% of the load. For example, for a 100-ton load this is $100 \text{ tons} \times 3\% = 3 \text{ tons}$.



Our load cells have a low center of gravity with the bottom making spherical contact. When inclination occurs, a rotational moment $M = W \times L$ is generated, causing the cell to move toward returning to the vertical state as when installed.



This principle allows tanks or hoppers to constantly return to the installed state, providing the same advantages as hanging type loads cells while still using a compression type load cell. The role of the check rod, etc., is limited to protection against vibrations due to stirrers, etc., or abnormal events (such as earthquakes).

FlexLock Features

FlexLock is a load cell mounting bracket with integrated vibration damping bracket and lifting prevention bracket.

Principles

- Points A and B have a ball joint structure that allows them to rotate freely.
- Point A, as the tank carrier, is a non-moving fixed point.
- Point B is fixed relative to the tank bracket.
- Point C is the center of the BBB triangle and the center of the tank.

Role of the Vibration Damping Bracket

Point C at the center of the tank will not move even if a lateral load acts on the tank.

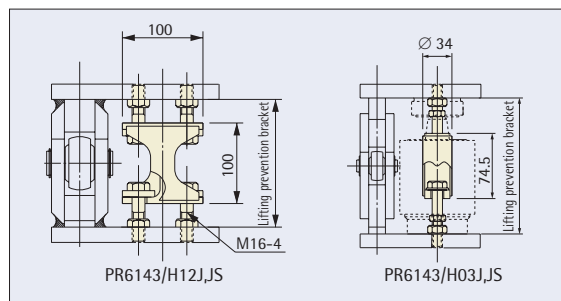
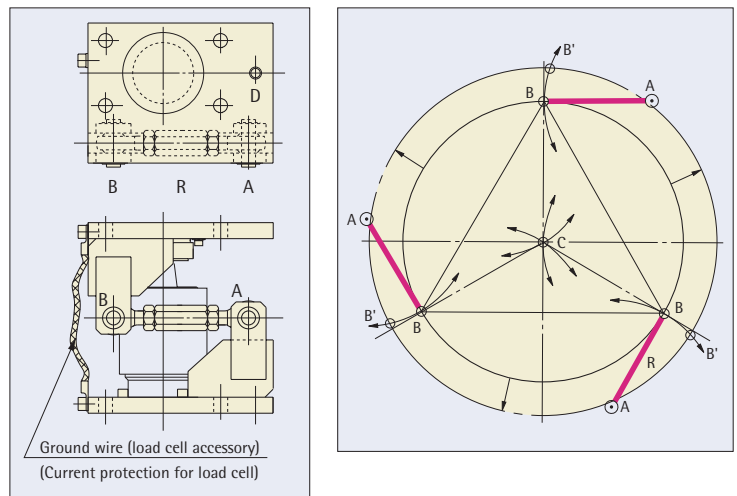
- The movable orbit of point B is the circle with radius equal to rod length R, centered at point A.
- The BBB triangle rotation is fixed by rod R, so the movable orbit of point C is the same as that of point B. The 3 movable orbits intersect at point C, so point C (tank center) is completely stationary.

Role of the Contact Preventing Bracket

The load on the load cell is not affected by tank expansion (or contraction).

- Point B can freely move to point B' due to the ball joint structure.

A lifting prevention bracket which is effective against epicentral earthquakes is also equipped as standard.



Lifting prevention bracket

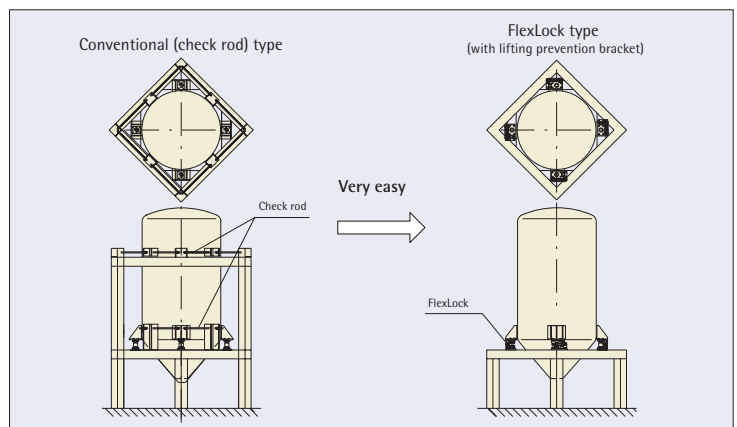
FlexLock System Advantages

Conventional check rods are not required.

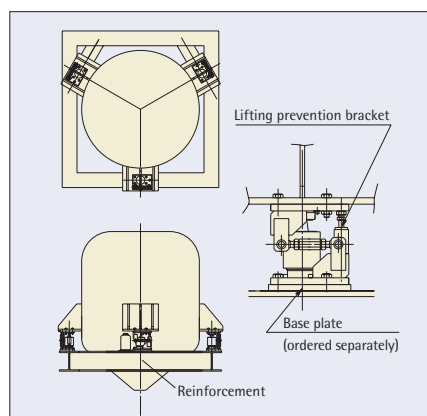
Compared to conventional check rod methods, using FlexLock improves weighing accuracy, drastically reduces tank hopper fixing platform size, and easily allows load cell mounting on liquid tank legs and load cell conversion of existing tanks.

When installing: Check rod construction is not required so the time required for construction can be shortened. (Dummy pipes are equipped as standard to all FlexLocks)

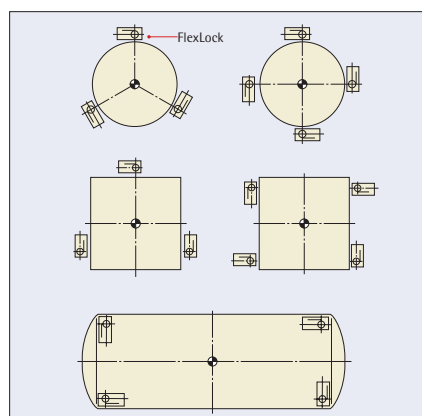
When operating: The space around the tank can be secured, improving working efficiency.



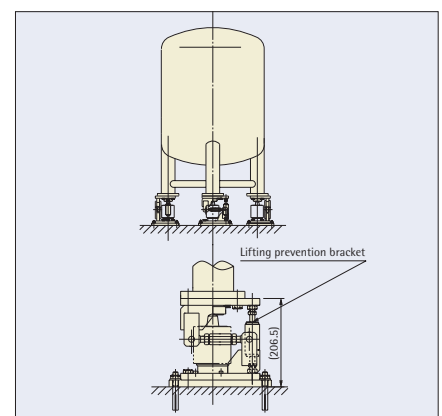
Mounting example using FlexLock



3-point support of round hopper



Positional relationship between load cell and FlexLock units (note rod direction)



Tank with legs

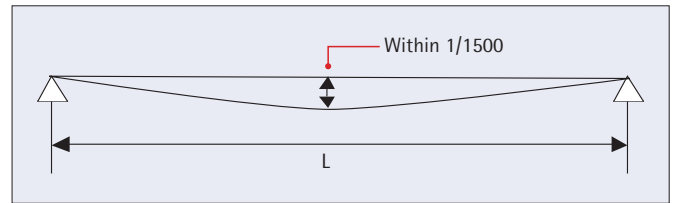
Precautions for Load Cell Scale Accuracy Retention and Machinery

Load Cell Mounting Platform

1) Design for high rigidity

For weighing accuracy of 1/2000, ensure that the maximum deflection between load cells (L) is within $L \times 1/1500$.

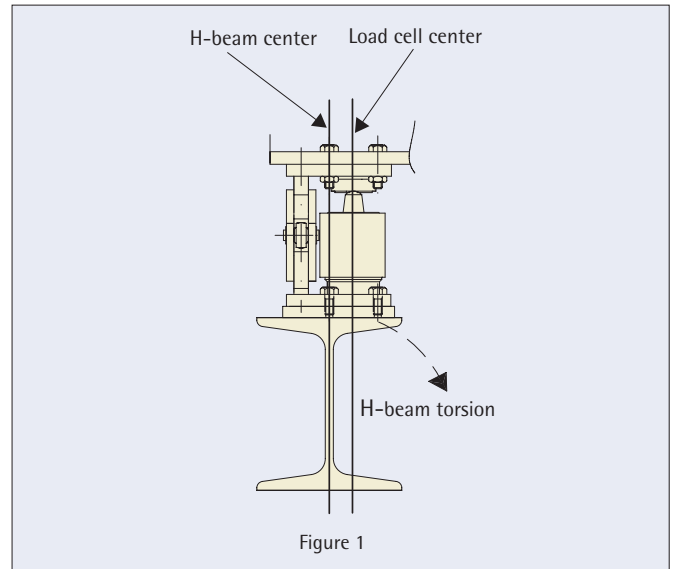
Large deflection will lead to tension on the scale piping, applying an inaccurate load to the load cell and resulting in errors. The load cell will also tilt, resulting in errors.



2) Torsion of channel steel or H-beam blades

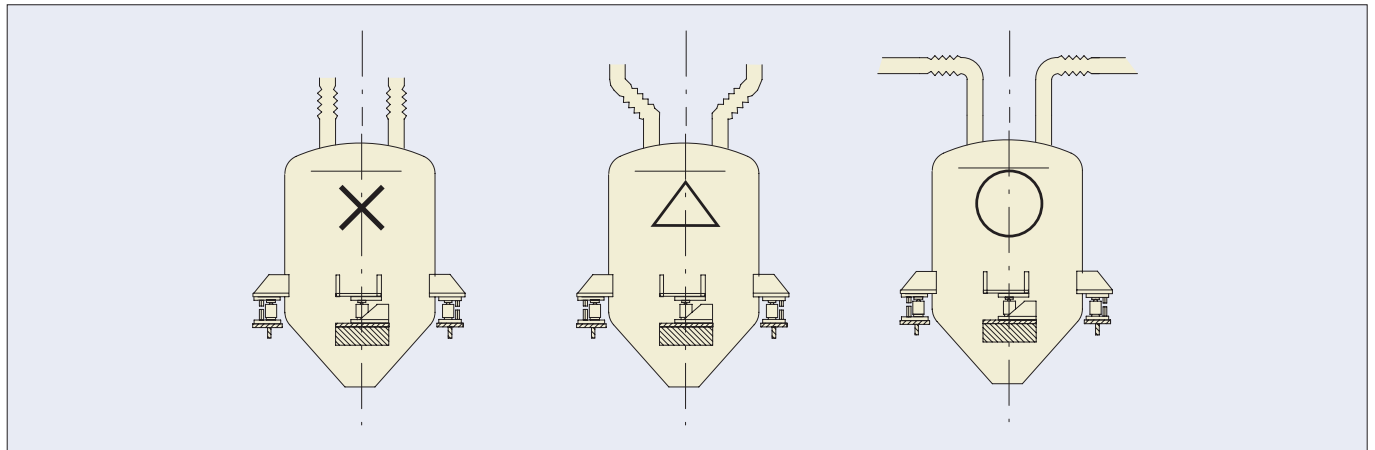
If the blade twists as in figure 1, the load cell will tilt, resulting in errors. The center of the load cell should be as closely aligned as possible with the center of the H-beam.

Insert ribs for reinforcement if using channel steel.



Piping

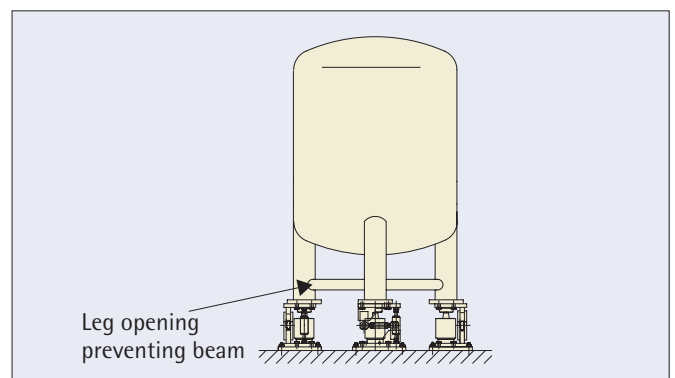
Install flexible pipes horizontally whenever possible.



Load Cell Tank Leg Mounting

Insert reinforcements between the tank legs.

The reinforcements can be used as weight loading platforms during load testing.



Industrial Scales



Flat-bed Scales IF Series (Non-Explosion-Proof Type IFS, Intrinsically Safe Explosion-Proof Type IFXS)

Fully stainless steel thin type platform scale. Ideal for installation in cleanrooms where pits are not feasible. (Thinnest 25 mm)

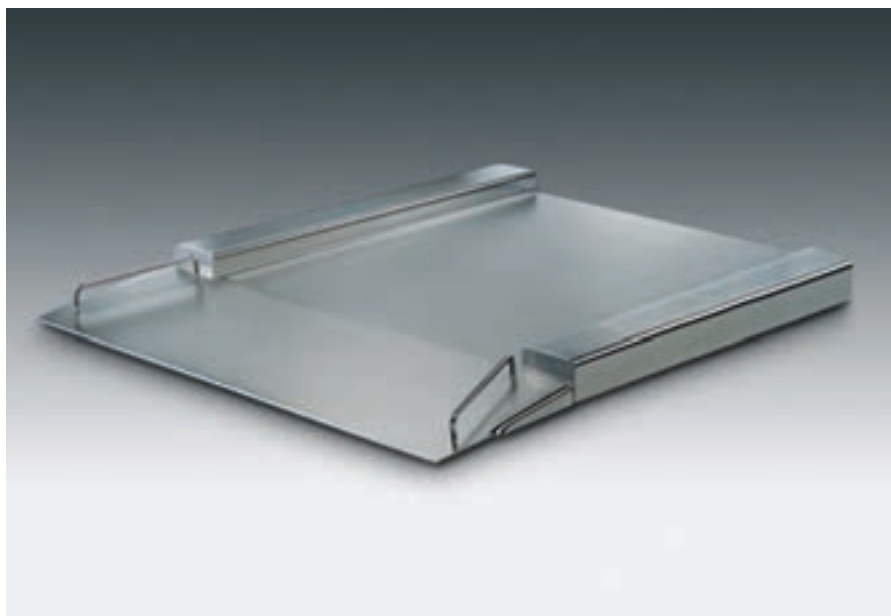
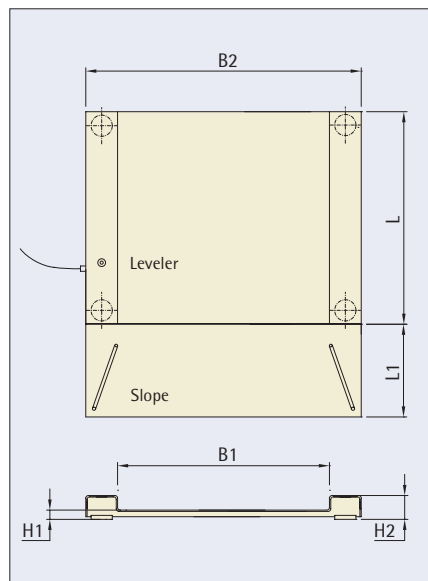
Features

- Wide range of weighing capacities and platform sizes
Non-explosion-proof: 59 types, explosion-proof: 48 types
- Various options are available based on the operating method
- Made entirely of stainless steel (AISI304 SUS304 equivalent)
Bead blasted finish, seamless machining
- Accuracy: 1/3000
(Uses 1/6000 load cell type)
- Max. display resolution: 1/30,000
(When combined with a CAIS type display. However, resolution is 1/15,000 if T8 option is used)
- Completely waterproof IP67 and IP68
- Separable weighing part and display part
Display can be selected based on the application
- Display connection cable 6 m
- Single-sided slope equipped as standard
(Double slopes available as options)

(Explosion-proof type)

- Intrinsically safe explosion-proof structure
Ex ib IIC T4
(Explosion-proof international standard ATEX accredited. Supported with IFXS types)
- Select among 3 types: Power supply for installation in explosion-proof areas, power supply for installation in safe areas, and battery type

External Dimensions



* Photo shows model with electro-polished finish (optional specification).



Glass beads blasted finish (standard)



Electro-polished finish (optional specification)

Model	L	B1	L1	H1	H2	B2	Rated Capacity
IF(X)S4xxxGG-I	600	600	350	35	85	840	150 ~ 1,000 kg
IF(X)S4xxxIG-I	800	600	350	35	85	840	150 ~ 1,000 kg
IF(X)S4xxxII-I	800	800	350	35	85	1,040	150 ~ 1,500 kg
IF(X)S4xxxLG-I	1,000	600	350	35	85	840	150 ~ 1,500 kg
IF(X)S4xxxLI-I	1,000	800	350	35	85	1,040	150 ~ 1,000 kg
IF(X)S4xxxLI-I	1,000	800	500	45	85	1,040	1,500 ~ 3,000 kg
IF(X)S4xxxLL-I	1,000	1,000	350	35	85	1,240	150 ~ 1,000 kg
IF(X)S4xxxLL-I	1,000	1,000	500	45	85	1,240	1,500 ~ 3,000 kg
IF(X)S4xxxNL-I	1,250	1,000	350	35	85	1,240	150 ~ 1,000 kg
IF(X)S4xxxNL-I	1,250	1,000	500	45	85	1,240	1,000 ~ 3,000 kg
IF(X)S4xxxNN-I	1,250	1,250	350	35	85	1,490	150 ~ 300 kg
IF(X)S4xxxNN-I	1,250	1,250	500	45	85	1,490	600 ~ 3,000 kg
IF(X)S4xxxRN-I	1,500	1,250	350	35	85	1,490	150 ~ 300 kg
IF(X)S4xxxRN-I	1,500	1,250	350	35	85	1,490	600 ~ 3,000 kg
IF(X)S4xxxRR-I	1,500	1,500	500	45	85	1,740	150 ~ 3,000 kg
IF(X)S4xxxWR-I	2,000	1,500	500	45	85	1,740	150 ~ 3,000 kg

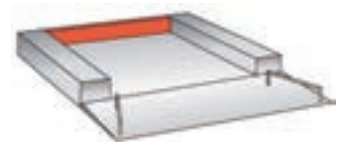
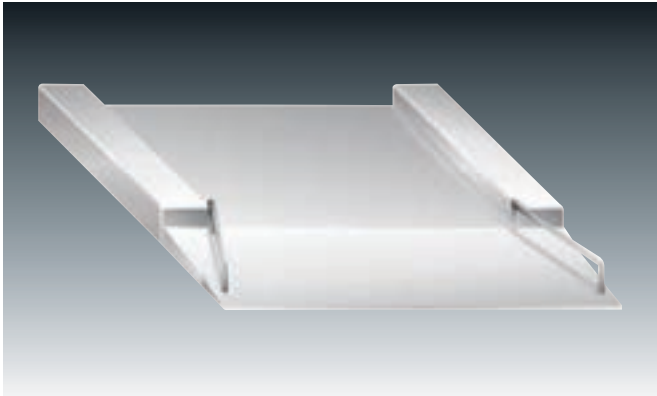
Flat-bed Scales IF Series (Non-Explosion-Proof Type: IFS, Intrinsically Safe Explosion-Proof Type (ATEX accredited): IFXS)

Model	Weighing Range	Readability	Platform Dimensions (W x D x H) (mm)	Option V1	Option V2	Option T7	Option T16
IF(X)S4-150GG-I	150 kg	5 g	600 x 600 x 35	●			
IF(X)S4-150IG-I			600 x 800 x 35	●		●	●
IF(X)S4-150II-I			800 x 800 x 35	●		●	●
IF(X)S4-150LG-I			600 x 1,000 x 35	●		●	●
IF(X)S4-150LI-I			800 x 1,000 x 35	●		●	●
IF(X)S4-150LL-I			1,000 x 1,000 x 35	●		●	●
IF(X)S4-150NL-I			1,000 x 1,250 x 35	●		●	●
IF(X)S4-150NN-I			1,250 x 1,250 x 35	●		●	●
IF(X)S4-150RN-I			1,250 x 1,500 x 35	●		●	●
IF(X)S4-150RR-I			1,500 x 1,500 x 45		●	●	●
IF(X)S4-150WR-I			1,500 x 2,000 x 45		●		
IF(X)S4-300GG-I	300 kg	10 g	600 x 600 x 35	●			
IF(X)S4-300IG-I			600 x 800 x 35	●		●	●
IF(X)S4-300II-I			800 x 800 x 35	●		●	●
IF(X)S4-300LG-I			600 x 1,000 x 35	●		●	●
IF(X)S4-300LI-I			800 x 1,000 x 35	●		●	●
IF(X)S4-300LL-I			1,000 x 1,000 x 35	●		●	●
IF(X)S4-300NL-I			1,000 x 1,250 x 35	●		●	●
IF(X)S4-300NN-I			1,250 x 1,250 x 35	●		●	●
IF(X)S4-300RN-I			1,250 x 1,500 x 35	●		●	●
IF(X)S4-300RR-I			1,500 x 1,500 x 45		●	●	●
IF(X)S4-300WR-I			1,500 x 2,000 x 45		●		
IF(X)S4-600GG-I	600 kg	20 g	600 x 600 x 35	●			
IF(X)S4-600IG-I			600 x 800 x 35	●		●	●
IF(X)S4-600II-I			800 x 800 x 35	●		●	●
IF(X)S4-600LG-I			600 x 1,000 x 35	●		●	●
IF(X)S4-600LI-I			800 x 1,000 x 35	●		●	●
IF(X)S4-600LL-I			1,000 x 1,000 x 35	●		●	●
IF(X)S4-600NL-I			1,000 x 1,250 x 35	●		●	●
IF(X)S4-600NN-I			1,250 x 1,250 x 45		●	●	●
IF(X)S4-600RN-I			1,250 x 1,500 x 45		●	●	●
IF(X)S4-600RR-I			1,500 x 1,500 x 45		●	●	●
IF(X)S4-600WR-I			1,500 x 2,000 x 45		●		
IF(X)S4-1000GG-I	1,000 kg	50 g	600 x 600 x 35	●			
IF(X)S4-1000IG-I			600 x 800 x 35	●		●	●
IF(X)S4-1000II-I			800 x 800 x 35	●		●	●
IF(X)S4-1000LG-I			600 x 1,000 x 35	●		●	●
IF(X)S4-1000LI-I			800 x 1,000 x 35	●		●	●
IF(X)S4-1000LL-I			1,000 x 1,000 x 35			●	●
IF(X)S4-1000NL-I			1,000 x 1,250 x 35			●	●
IF(X)S4-1000NN-I			1,250 x 1,250 x 45		●	●	●
IF(X)S4-1000RN-I			1,250 x 1,500 x 45		●	●	●
IF(X)S4-1000RR-I			1,500 x 1,500 x 45			●	●
IF(X)S4-1000WR-I			1,500 x 2,000 x 45				
IF(X)S4-1500II-I	1,500 kg	50 g	800 x 800 x 35	●		●	●
IF(X)S4-1500LG-I			600 x 1,000 x 35	●		●	●
IF(X)S4-1500LI-I			800 x 1,000 x 45		●	●	●
IF(X)S4-1500LL-I			1,000 x 1,000 x 45		●	●	●
IF(X)S4-1500NL-I			1,000 x 1,250 x 45		●	●	●
IF(X)S4-1500NN-I			1,250 x 1,250 x 45		●	●	●
IF(X)S4-1500RN-I			1,250 x 1,500 x 45		●	●	●
IF(X)S4-1500RR-I			1,500 x 1,500 x 45			●	●
IF(X)S4-1500WR-I			1,500 x 2,000 x 45				
IF(X)S4-3000LL-I	3,000 kg	100 g	1,000 x 1,000 x 45			●	●
IF(X)S4-3000NL-I			1,000 x 1,250 x 45			●	●
IF(X)S4-3000NN-I			1,250 x 1,250 x 45			●	●
IF(X)S4-3000RN-I			1,250 x 1,500 x 45			●	●
IF(X)S4-3000RR-I			1,500 x 1,500 x 45			●	●
IF(X)S4-3000WR-I			1,500 x 2,000 x 45				

IF(X)S Series Options List

- V1 (35 mm → 25 mm) and V2 (45 mm → 35 mm) allow the platform to be lowered by 10 mm (refer to previous page for compatible types)
(Use with option T4 is recommended)
- R2 AISI316Ti (SUS316L equivalent) electro-polished finish
- R6 AISI304 (SUS304 equivalent) electro-polished finish
- T17 : T16 options + second slope

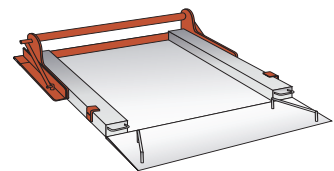
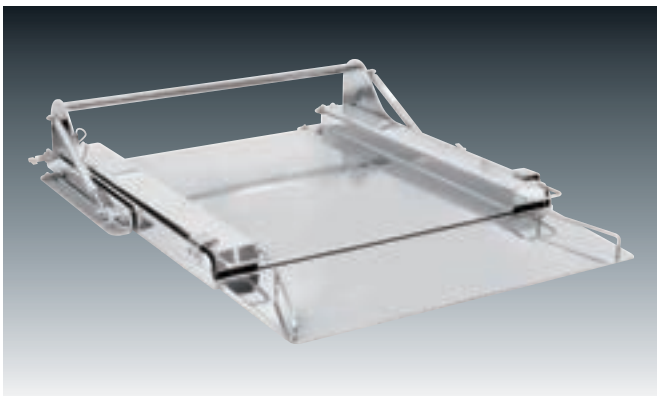
Standard Type



T4 Option

Includes drive through protection for exclusively one-sided loading and unloading

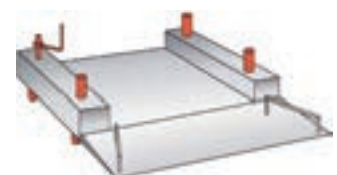
Pressure Lift



T16 Option

Premium folding device; complies with NIOSH specifications for one-person operability (required lifting force < 20kg)

Caster Type



T7 Option

4 built-in retractable wheels which can be lowered for easy handling of platform



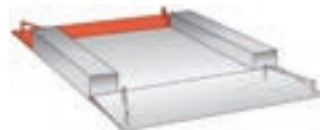
T13 Option

4 transport grips on the front and rear sides



T6 Option

Rollers on the rear side and grips on the front side for one side lifting and handling



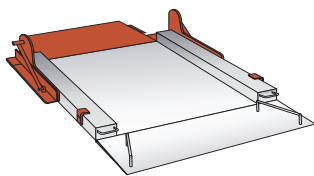
T15 Option

Second ramp for two-sided access and use as a drive-through scale



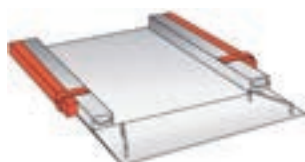
T14 Option

Support arm for attaching an electronic scale display



T17 Option

T16 but with second ramp for two-sided access and use as a drive-through scale



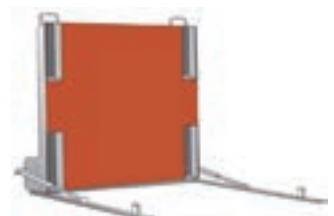
T10 Option

Basic folding device with folding hinge and gas-pressurized spring for 2 man operation



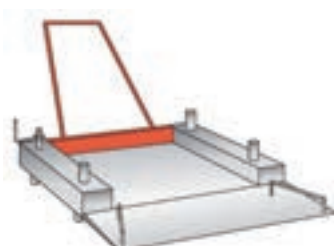
T11 Option

As T10 option but with second ramp for two-sided access and use as a drive-through scale



T9 Option

Cover plate for added protection of the underside of the platform with openings for the load feet



T5 Option

Steering drawbar for easy pushing, combined with drive-through protection as standard

Fully Stainless Steel Platform Scales Combics Series (Non-Explosion Proof Type CAAPS, Intrinsically Safe Explosion-Proof Type CAPXS)

Fully stainless steel platform scales with load cell can be washed with water and are ideal for medical and food production industries where sanitation is a concern.

Features

- Various weighing ranges and plate sizes.
Explosion-proof and non-explosion-proof include 46 types each
- High accuracy: 1/6000
- Max. display resolution: 1/30,000 (combined with our indicator)
- Completely waterproof IP67 and IP68
- RS232C equipped as standard (explosion-proof types require YDI05-Z barrier)
- Separable weighing part and display part (refer to pages 53 ~ 54 for display details)
Display can be selected based on the application.
(Non-explosion-proof: 3 types, explosion-proof: 1 type)
(DC ED FE GF IG sizes are 3 m, others are 6 m)
However, 600 kg range IG size types include 6 m)

(Explosion-proof type)

- Intrinsically safe explosion-proof structure Ex ib IIC T4 (explosion-proof standard ATEX accredited. Supported with CAPXS types)
- Select among 3 types: Power supply for installation in explosion-proof areas, power supply for installation in safe areas, and battery type



Weighing element size up to IG



Weighing element size from II to WR

Options

- R2: Machined top plate SUS AISI316Ti electro-polished
- T1: Air cylinder top plate open/close mechanism
- S2: Frame material: SUS AISI316Ti electro-polished
- I69: CAAPS1 and CAAPS4 Series dust-proof, waterproof protection (IP) changed to IP69K * Excluding GF and IG types.

Air cylinder type cover plate open/close mechanism (T1 option)



Floor can be cleaned.

Features

- Can be opened and closed like the trunk of a vehicle.
- Ideal for medical and food production facilities.

Combics types of the following dimensions support opening/closing option T1.

800 x 800 x 90
1,000 x 800 x 90
1,000 x 1,000 x 90
1,250 x 1,000 x 90
1,250 x 1,250 x 90
1,500 x 1,250 x 90
1,500 x 1,500 x 90
2,000 x 1,500 x 100

Fully Stainless Steel Platform Scales Combics Series (Non-Explosion Proof Type CAAPS)

Model	Weighing Range (kg)	Readability (g)	Weighing Platform Dimensions (W x D x H) mm	Body Weight (Gross Weight) (kg)	Protection Class
CAAPS1-3DC-I	3	0.1	320 x 240 x 82	6.4 (7.9)	IP68
CAAPS1-6DC-I	6	0.2	320 x 240 x 82	6.4 (7.9)	IP68
CAAPS1-15DC-I	15	0.5	320 x 240 x 82	6.4 (7.9)	IP68
CAAPS1-30ED-I	30	1	400 x 300 x 101	11.5 (13.5)	IP68
CAAPS1-30FE-I			500 x 400 x 104	20.9 (23.9)	IP68
CAAPS1-60ED-I	60	2	400 x 300 x 101	11.5 (13.5)	IP68
CAAPS1-60FE-I			500 x 400 x 104	20.9 (23.9)	IP68
CAAPS4-60GF-I			650 x 500 x 90	20.0 (32.5)	IP68
CAAPS4-60IG-I			800 x 600 x 90	34.6 (51.6)	IP68
CAAPS1-150FE-I	150	5	500 x 400 x 104	20.9 (23.9)	IP68
CAAPS4-150GF-I			650 x 500 x 90	20.0 (32.5)	IP68
CAAPS4-150IG-I			800 x 600 x 90	34.6 (51.6)	IP68
CAAPS4-150II-I			800 x 800 x 90	76 (157)	IP68
CAAPS4-150LL-I			1,000 x 1,000 x 90	102 (157)	IP68
CAAPS4-150NN-I			1,250 x 1,250 x 90	158 (188)	IP68
CAAPS4-300GF-I	300	10	650 x 500 x 90	20.0 (32.5)	IP68
CAAPS4-300IG-I			800 x 600 x 90	34.6 (51.6)	IP68
CAAPS4-300II-I			800 x 800 x 90	76 (157)	IP68
CAAPS4-300LI-I			1,000 x 800 x 90	86 (157)	IP68
CAAPS4-300LL-I			1,000 x 1,000 x 90	102 (157)	IP68
CAAPS4-300NN-I			1,250 x 1,250 x 90	158 (188)	IP68
CAAPS4-600IG-I	600	20	800 x 600 x 90	34.6 (51.6)	IP68
CAAPS4-600II-I			800 x 800 x 90	76 (157)	IP68
CAAPS4-600LI-I			1,000 x 800 x 90	86 (157)	IP68
CAAPS4-600LL-I			1,000 x 1,000 x 90	102 (157)	IP68
CAAPS4-600NL-I			1,250 x 1,000 x 90	133 (188)	IP68
CAAPS4-600NN-I			1,250 x 1,250 x 90	158 (188)	IP68
CAAPS4-600RN-I			1,500 x 1,250 x 90	178 (265)	IP68
CAAPS4-600RR-I			1,500 x 1,500 x 90	230 (317)	IP68
CAAPS4-600WR-I			2,000 x 1,500 x 100	422 (512)	IP68
CAAPS4-1500II-I	1500	50	800 x 800 x 90	76 (157)	IP68
CAAPS4-1500LI-I			1,000 x 800 x 90	86 (157)	IP68
CAAPS4-1500LL-I			1,000 x 1,000 x 90	102 (157)	IP68
CAAPS4-1500NL-I			1,250 x 1,000 x 90	133 (188)	IP68
CAAPS4-1500NN-I			1,250 x 1,250 x 90	158 (188)	IP68
CAAPS4-1500RN-I			1,500 x 1,250 x 90	178 (265)	IP68
CAAPS4-1500RR-I			1,500 x 1,500 x 90	230 (317)	IP68
CAAPS4-1500WR-I			2,000 x 1,500 x 100	422 (512)	IP68
CAAPS4-3000II-I	3000	100	800 x 800 x 90	76 (157)	IP68
CAAPS4-3000LI-I			1,000 x 800 x 90	86 (157)	IP68
CAAPS4-3000LL-I			1,000 x 1,000 x 90	102 (157)	IP68
CAAPS4-3000NL-I			1,250 x 1,000 x 90	133 (188)	IP68
CAAPS4-3000NN-I			1,250 x 1,250 x 90	158 (188)	IP68
CAAPS4-3000RN-I			1,500 x 1,250 x 90	178 (265)	IP68
CAAPS4-3000RR-I			1,500 x 1,500 x 90	230 (317)	IP68
CAAPS4-3000WR-I			2,000 x 1,500 x 100	422 (512)	IP68

Fully Stainless Steel Platform Scales Combics Series (Intrinsically Safe Explosion-Proof Type CAPXS)



Model	Weighing Range (kg)	Readability (g)	Weighing Platform Dimensions (W x D x H) mm	Body Weight (Gross Weight) (kg)	Protection Class
CAPXS1-3DC-I	3	0.1	320 x 240 x 82	6.4 (7.9)	IP67
CAPXS1-6DC-I	6	0.2	320 x 240 x 82	6.4 (7.9)	IP67
CAPXS1-15DC-I	15	0.5	320 x 240 x 82	6.4 (7.9)	IP67
CAPXS1-30ED-I	30	1	400 x 300 x 101	11.5 (13.5)	IP67
CAPXS1-30FE-I			500 x 400 x 104	20.9 (23.9)	IP67
CAPXS1-60ED-I	60	2	400 x 300 x 101	11.5 (13.5)	IP67
CAPXS1-60FE-I			500 x 400 x 104	20.9 (23.9)	IP67
CAPXS4-60GF-I			650 x 500 x 90	20.0 (32.5)	IP67
CAPXS4-60IG-I			800 x 600 x 90	34.6 (51.6)	IP67
CAPXS1-150FE-I	150	5	500 x 400 x 104	20.9 (23.9)	IP67
CAPXS4-150GF-I			650 x 500 x 90	20.0 (32.5)	IP67
CAPXS4-150IG-I			800 x 600 x 90	34.6 (51.6)	IP67
CAPXS4-150II-I			800 x 800 x 90	76 (157)	IP68
CAPXS4-150LL-I			1,000 x 1,000 x 90	102 (157)	IP68
CAPXS4-150NN-I			1,250 x 1,250 x 90	158 (188)	IP68
CAPXS4-300GF-I	300	10	650 x 500 x 90	20.0 (32.5)	IP68
CAPXS4-300IG-I			800 x 600 x 90	34.6 (51.6)	IP68
CAPXS4-300II-I			800 x 800 x 90	76 (157)	IP68
CAPXS4-300LI-I			1,000 x 800 x 90	86 (157)	IP68
CAPXS4-300LL-I			1,000 x 1,000 x 90	102 (157)	IP68
CAPXS4-300NN-I			1,250 x 1,250 x 90	158 (188)	IP68
CAPXS4-600IG-I	600	20	800 x 600 x 90	34.6 (51.6)	IP68
CAPXS4-600II-I			800 x 800 x 90	76 (157)	IP68
CAPXS4-600LI-I			1,000 x 800 x 90	86 (157)	IP68
CAPXS4-600LL-I			1,000 x 1,000 x 90	102 (157)	IP68
CAPXS4-600NL-I			1,250 x 1,000 x 90	133 (188)	IP68
CAPXS4-600NN-I			1,250 x 1,250 x 90	158 (188)	IP68
CAPXS4-600RN-I			1,500 x 1,250 x 90	178 (265)	IP68
CAPXS4-600RR-I			1,500 x 1,500 x 90	230 (317)	IP68
CAPXS4-600WR-I			2,000 x 1,500 x 100	422 (512)	IP68
CAPXS4-1500II-I	1500	50	800 x 800 x 90	76 (157)	IP68
CAPXS4-1500LI-I			1,000 x 800 x 90	86 (157)	IP68
CAPXS4-1500LL-I			1,000 x 1,000 x 90	102 (157)	IP68
CAPXS4-1500NL-I			1,250 x 1,000 x 90	133 (188)	IP68
CAPXS4-1500NN-I			1,250 x 1,250 x 90	158 (188)	IP68
CAPXS4-1500RN-I			1,500 x 1,250 x 90	178 (265)	IP68
CAPXS4-1500RR-I			1,500 x 1,500 x 90	230 (317)	IP68
CAPXS4-1500WR-I			2,000 x 1,500 x 100	422 (512)	IP68
CAPXS4-3000II-I	3000	100	800 x 800 x 90	76 (157)	IP68
CAPXS4-3000LI-I			1,000 x 800 x 90	86 (157)	IP68
CAPXS4-3000LL-I			1,000 x 1,000 x 90	102 (157)	IP68
CAPXS4-3000NL-I			1,250 x 1,000 x 90	133 (188)	IP68
CAPXS4-3000NN-I			1,250 x 1,250 x 90	158 (188)	IP68
CAPXS4-3000RN-I			1,500 x 1,250 x 90	178 (265)	IP68
CAPXS4-3000RR-I			1,500 x 1,500 x 90	230 (317)	IP68
CAPXS4-3000WR-I			2,000 x 1,500 x 100	422 (512)	IP68

Load Cells

Load Cell Applications

Load Cell Technical Materials

Industrial Scales

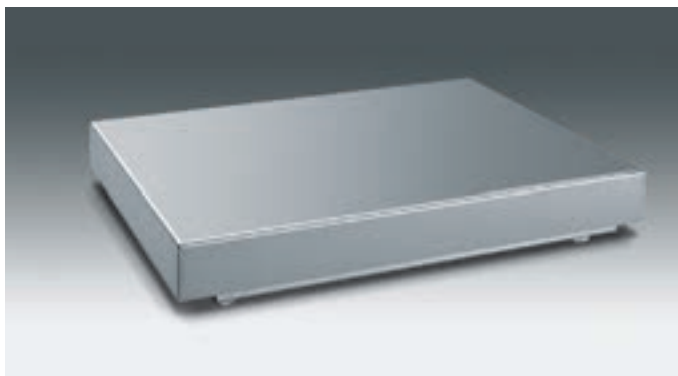
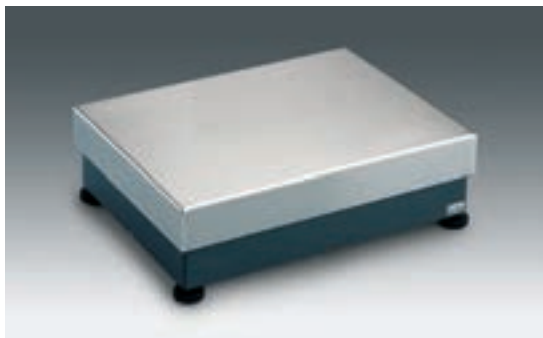
Industrial Scale Applications

Checkweighers / Metal Detectors / X-Ray Inspection Systems

Electromagnetic Platform Scale IS Series

Features

- Weighing range: 16 kg ~ 300 kg
- Select among 3 types of indicators based on the application
- Max. display resolution: 1/640,000
- Electromagnetic type adopted for high accuracy
- Built-in weight with calibration and adjustment function
- Separable weighing part and display part
- Cable length
EDE/FEG: 3 m (ISFEG: 6 m)
IGG: 6 m
equipped as standard



Model	Weighing Range (kg)	Readability (g)	Weighing Platform Dimensions (mm)	Body Weight (kg)	Protection Class
ISEDE-16-H	16	0.1	400 x 300	15	IP65
ISEDE-34-H	34	0.1	400 x 300	15	IP65
ISEDE-64-H	64	0.1	400 x 300	15	IP44
ISEDE-64-S	64	1	400 x 300	15	IP65
IS64FEG-S0CE	64	1	560 x 450	33	IP67
IS150IGG-H	150	1	800 x 600	70	IP67
IS300IGG-H	300	2	800 x 600	70	IP67

Signum Series Compact Platform Scale

New platform scale that covers a 620 g ~ 65 kg weighing range, yet has a compact design.
Regular/advanced types are load cell types. Monolithic balance type
supreme/supreme stainless steel available in a lineup of 4 grades

Features

- Max. 300 kg overload protection function equipped
- Max. resolution: 620,000
- Dustproof/waterproof structure
Standard is IP43, with optional upgrade to IP65 available
(Fully stainless steel specification is IP65 specification as standard)
- Plate material SUS specification (AISI304)
- Fully stainless steel specification also available
- Supreme types available with an optional internal weight
- In addition to standard RS232C, the wide range of output options includes RS422, analog 4 - 20 mA, EtherNet, Profibus, etc.
- 2 m cable is equipped as standard between the display and platform



Selectable Signum Series Displays



Type 1



Type 2



Type 3

Display Function	Display 1	Display 2	Display 3
Keypad	6-key	14-key	17-key + numeric keys
Display	14-segment	14-segment + application symbols	14-segment + application symbols
Standard output (COM1)	RS232C		
Option output (UniCOM)	RS-232C, RS422, RS485, Profibus DP, EtherNet Digital I/O (5 contacts each), Analog output (0 - 20 mA/4 - 20 mA/0 - 10 V)		

Regular Type (Load Cell Type)

Model	Weighing Range (kg)	Readability (g)	Loading Platform Dimensions (mm)	Body Weight (kg)	Platform Material	Protection Class
SIWRDCP-□-3-I	3	0.1	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65
SIWRDCP-□-6-I	6	0.2	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65
SIWRDCP-□-15-I	15	0.5	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65
SIWRDCP-□-35-I	35	1	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65
SIWRDCP-□-60-I	60	2	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65

* Specify the display type in place of the □ placeholder.

Advanced Type (Load Cell Type)

Model	Weighing Range (kg)	Readability (g)	Loading Platform Dimensions (mm)	Body Weight (kg)	Platform Material	Protection Class
SIWABBP-□-1-H	1.5	0.01	180 x 180	6.8	Aluminum die-cast (SUS plate)	IP43/IP65
SIWABBP-□-8-I	8	0.1	180 x 180	6.8	Aluminum die-cast (SUS plate)	IP43/IP65
SIWADCP-□-7-S	7	0.1	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65
SIWADCP-□-16-S	16	0.2	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65
SIWADCP-□-35-S	35	0.5	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65
SIWADCP-□-65-S	65	1	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65
SIWAEDG-3-16-S	16	0.2	400 x 300	12.5	Galvanized steel plate body (SUS plate)	IP65/IP65
SIWAEDG-3-35-S	35	0.5	400 x 300	12.5	Galvanized steel plate body (SUS plate)	IP65/IP65
SIWAEDG-3-65-S	65	1	400 x 300	12.5	Galvanized steel plate body (SUS plate)	IP65/IP65

* Specify the display type in place of the □ placeholder. (SIWAEDG type is only available with display type 3.)

Signum Series Supreme Type (Monolithic Balance Type)



Features

- High resolution weighing scale with aluminum monolithic balance comparable to analytical balances
- Lineup of 0.62 kg ~ 35 kg weighing range
- Optional internal weight available

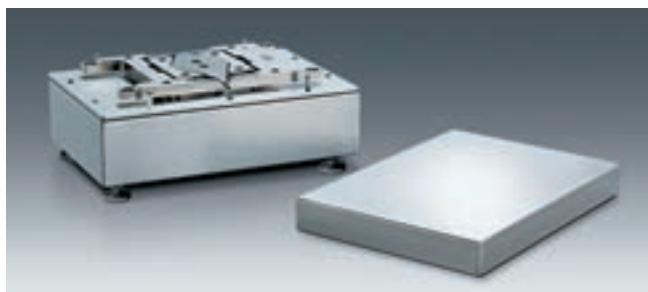


Supreme Type (Monolithic Balance Type)

Model	Weighing Range (kg)	Readability (g)	Loading Platform Dimensions (mm)	Body Weight (kg)	Platform Material	Protection Class
SIWSBBP-□-06-H	0.62	0.001	Ø 115	6.8	Aluminum die-cast (SUS plate)	IP43/IP65
SIWSBBP-□-3-H	3.1	0.01	180 x 180	6.8	Aluminum die-cast (SUS plate)	IP43/IP65
SIWSBBP-□-6-H	6.1	0.01	180 x 180	6.8	Aluminum die-cast (SUS plate)	IP43/IP65
SIWSDCP-□-6-S	6	0.1	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65
SIWSDCP-□-16-H	16	0.1	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65
SIWSDCP-□-35-H	35	0.1	350 x 240	12	Aluminum die-cast (SUS plate)	IP43/IP65

* Specify the display type in place of the □ placeholder.

Signum Series Supreme Stainless Steel Type (Monolithic Balance Type)



Features

- High resolution weighing scale with aluminum monolithic balance
- Lineup of 3.1 kg ~ 35 kg weighing capacity
- Fully stainless steel specification IP65
- Optional internal weight available



Supreme Stainless Steel Type (Monolithic Balance Type)

Model	Weighing Range (kg)	Readability (g)	Loading Platform Dimensions (mm)	Body Weight (kg)	Platform Material	Protection Class
SIWSBBS-□-3-H	3.1	0.01	182 x 182	7.5	Fully stainless steel	IP65/IP65
SIWSBBS-□-6-H	6.1	0.01	182 x 182	7.5	Fully stainless steel	IP65/IP65
SIWSDCS-□-6-S	6	0.1	370 x 260	14.5	Fully stainless steel	IP65/IP65
SIWSDCS-□-16-H	16	0.1	370 x 260	14.5	Fully stainless steel	IP65/IP65
SIWSDCS-□-35-H	35	0.1	370 x 260	14.5	Fully stainless steel	IP65/IP65

* Specify the display type in place of the □ placeholder.

Tabletop Display CAIS/CAISL 1/2/3

This product is a weight display that supports both tabletop and stand mounted use. The panel mounting option allows it to be mounted onto panels. Capable of displaying weight for both load cell type (standard) and electromagnetic type (optional) measuring instruments.

The CAIS series supports dust/waterproofing of IP68 & IP69K. The CAISL series is dustproof and waterproof IP44 / gusset connector specification. Select among [1/2/3] based on the required functions.



Specifications	Contents
Display resolution	Standard: 31,250 digits / Optional A10: 100,000 digits
Accuracy class	III
Excitation voltage (Load cell type)	Standard: 8.4 VDC / A10: 8.2 VDC
Bridge impedance	83 ~ 2000Ω
Signal input range	0 ~ 29.4 mV
Zero adjustment range	0.45 ~ 6.3 mV
Minimum input sensitivity	Standard: 0.672 μV/e / A10: 0.328 μV/e
Internal resolution	1/4,000,000
Display	20 mm LCD 7 digits, 14 segments CAIS(L)1/2 orange backlight, CAIS(L)3 white backlight CAIS(L)2 parameter display, CAIS(L)3 multiple parameter display
Power supply	100 ~ 240 VAC (-15/+10%) 17 W / 23 VA
Dust/waterproofing	CAIS IP68&IP69K CAISL IP44

Function		Model	CAIS (L) 1	CAIS (L) 2	CAIS (L) 3	
Input		Load Cell Type	None	⊙	⊙	
		Electromagnetic Type	A7	●	●	
Output	COM1	RS-232C	None *1	⊙	⊙	
	COM2	RS-232C	None	x	⊙	
	UniCOM	RS-232C	A1	●	●	●
		RS-422	A2	●	●	●
		RS-485	A3	●	●	●
		4 ~ 20 mA	A9 *2	●	●	●
		Profibus	B1	●	●	●
		Ethemet	B9	●	●	●
GMP compliance printing			x	⊙	⊙	
Ten-key input			x	⊙	⊙	

○ Equipped as standard ● Optional

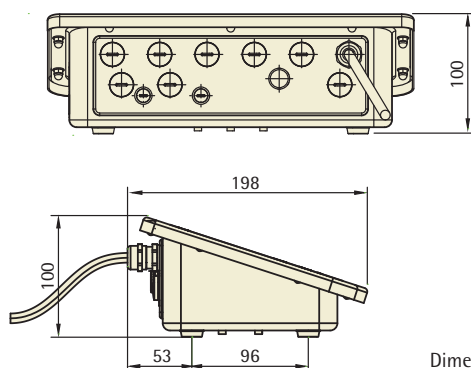
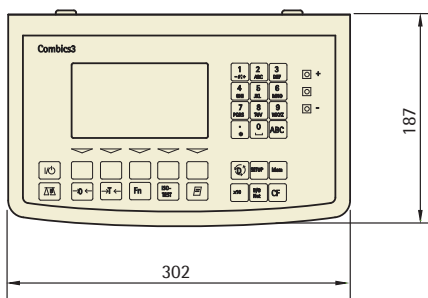
*1 Printers can only be connected to COM1.

*2 4~20 mA output has an output accuracy of approximately 1/700, so cannot be recommended with electromagnetic types.

Optional Devices	Model	Description
Desktop printer	YDP20-OCE	M9 cable or adapter required
Printer cable	M9	6 m
Printer adapter	6971991+6071954	100VAC
Electromagnetic weighing element cable	M41	3 m
PC RS-232C cable	M4	6 m (can be extended up to 15 m)
Indicator stand	J1-YDH20J	SUS with printer stand
	J1-YDH20JE	SUS without printer stand
	J1-YDH20JP	SS without printer stand
Panel mounting kit	YAS07CI	For panel mounting
Wall mounting bracket	YDH02CIS	

* YD020-OCE does not require an adapter if an M9 cable is used.

External Dimensions



Dimensions in mm

Tabletop Type Intrinsically Safe Explosion-Proof Display CAIXS2

This product is a weight display that supports both tabletop and stand mounted use.

Intrinsically safe explosion-proof structure makes it possible to be used as a display in hazardous areas.

Dust/waterproofing IP68 & 69K supported.

International standard IEC Ex approved

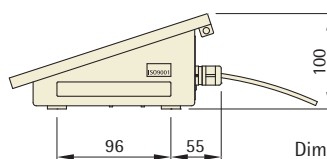
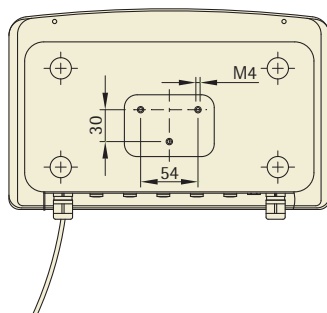
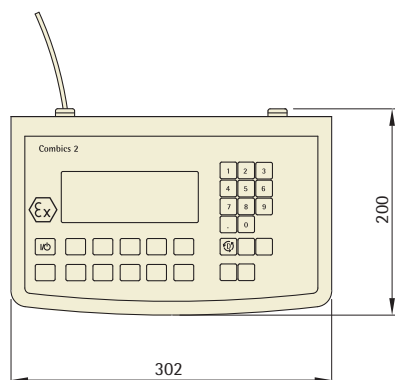


Specifications	Contents
Display resolution	62,500 digits
Accuracy class	III
Bridge impedance	83 ~ 2000Ω
Signal input range	0 ~ 29.4 mV
Zero adjustment range	0.45 ~ 6.3 mV
Minimum input sensitivity	0.2 $\mu\text{V/e}$ (Class III 0.672 $\mu\text{V/e}$)
Display	20 mm LCD 7 digits, 14 segments Orange backlight, multiple parameter display
Power supply	100 ~ 240 VAC (-15/+10%) Separate power supply required
Dust/waterproofing	IP68 & IP69K

Function	Model	Remarks
Input (WP1)	A/D converter	A15
	RS-232C	A16
	RS-485	A19
Output (COM1)	RS-232C	A21
	RS-422	A22
	RS-485	A23

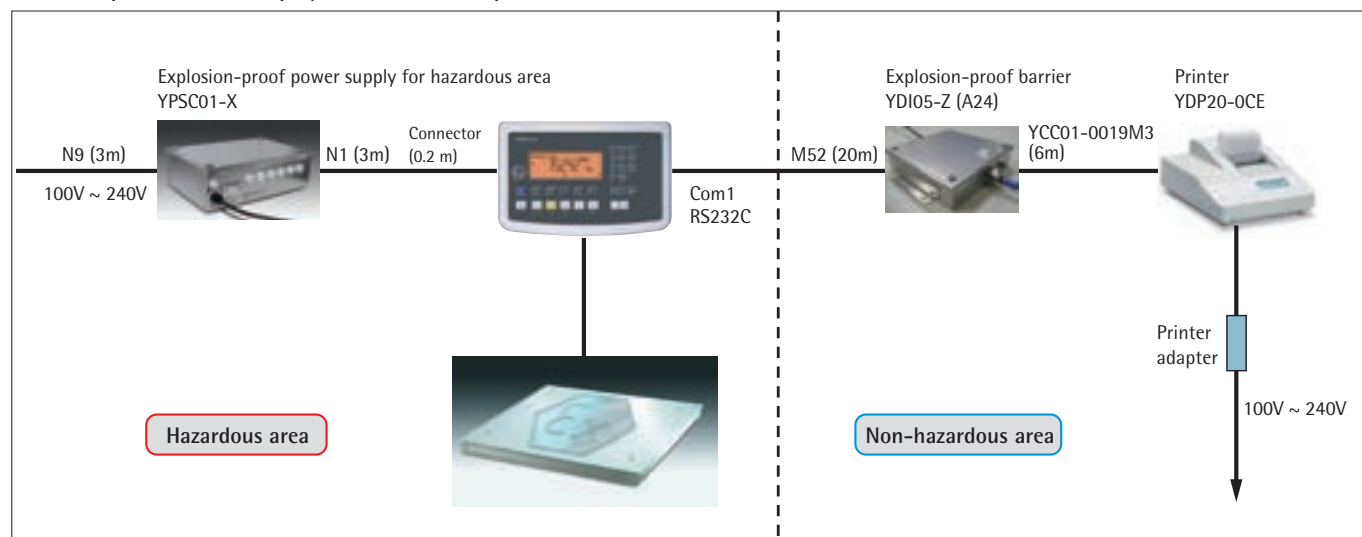
* Output (COM1) can be selected from RS-232C/RS-422/RS-485

External Dimensions



Dimensions in mm

CAIXS2 Explosion-Proof Display Connection Example



Intrinsically Safe Explosion-Proof CAIXS2 Display: Expanded Explosion-Proof Weighing Applications

The new explosion-proof CAIXS2 display supports a wide variety of explosion-proof weighing systems, enabling optimal measurements to be easily made.

Make use of these versatile combinations to suit your explosion-proof facility.

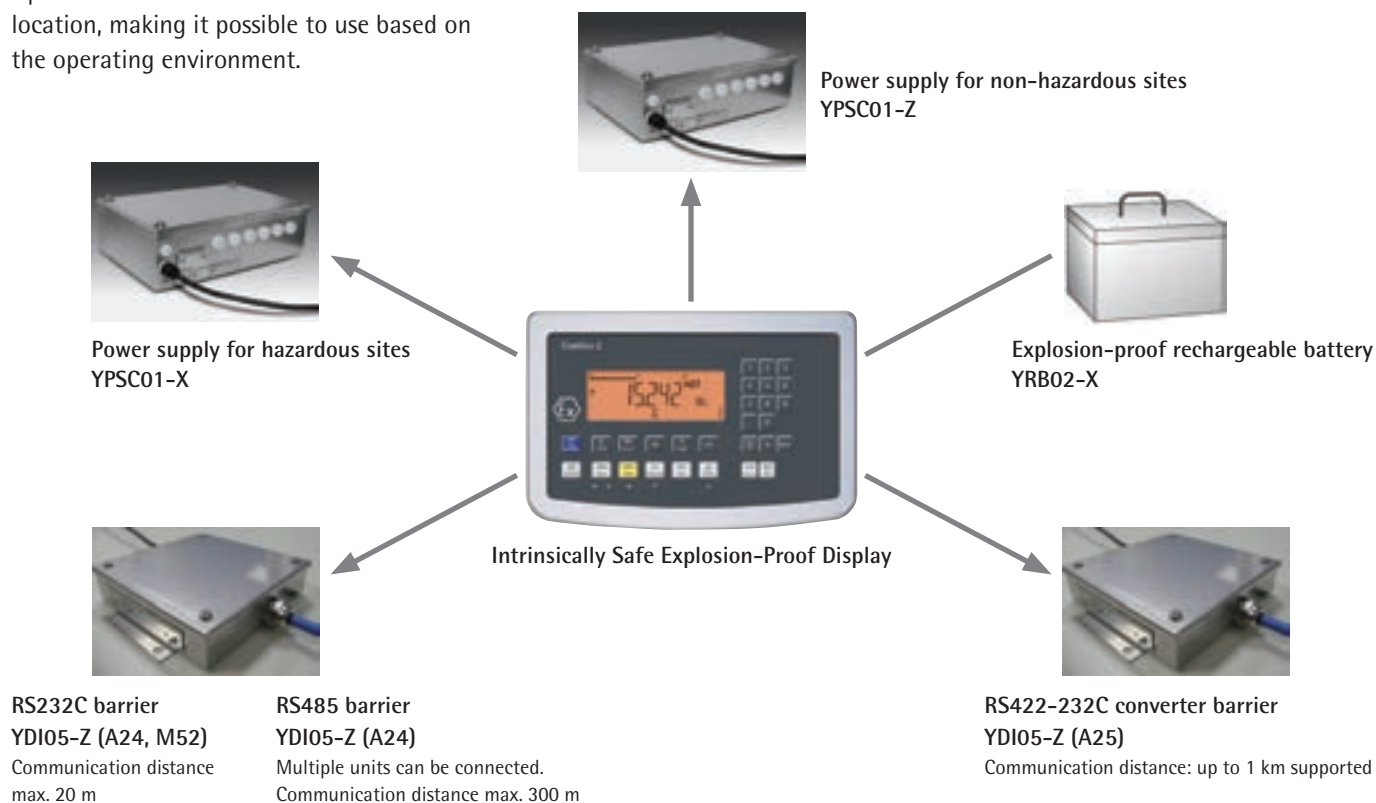
As the weighing system can be selected based on the measurement site, use is possible with combinations suited to the environment, from highly hygienic/clean devices for medical, fine chemical and food production sites through to metal and mining sites requiring durability and strength.



Intrinsically Safe Explosion-Proof Display CAIXS2
International standard IEC Ex approved *

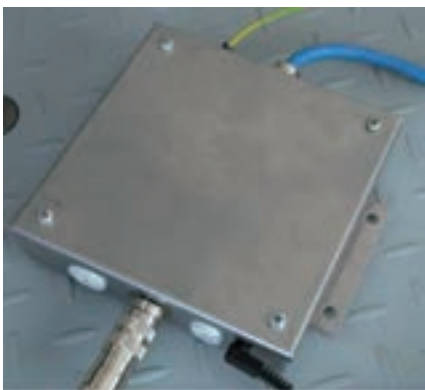


Optional devices can be selected to suit the location, making it possible to use based on the operating environment.

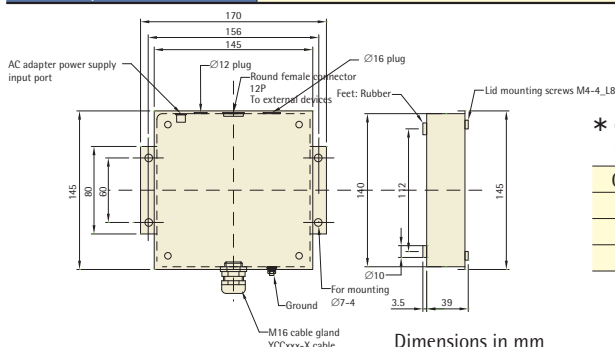


*IEC Ex is an international accreditation policy for explosion-proof electronic equipment governed by the international standard regulatory body IEC (International Electrotechnical Commission).

Communication barrier YDI05-Z+M55



Supported models	CAIXS2 SignumEx IS-X
Power supply	100 ~ 240 VAC (-15/+10%), with AC/DC adapter
Dust/waterproofing	IP40
Material	Stainless Steel
Operating temperature	0 ~ 40°C
Primary cable	M54 1 ~ 1000 m selectable type
Secondary cable	YCC01-0019M3 or YCC01-09ISM5



* Communication specification can be selected from the following.

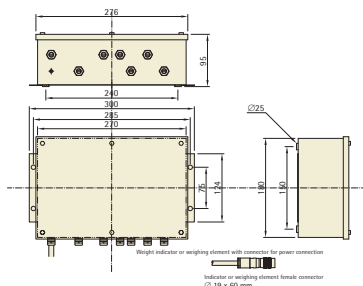
Options	Communication Adapter
A24	RS-232C→RS-232C
A24	RS-485→RS-485
A25	RS-422 → RS-232C

Intrinsically Safe Explosion-Proof Power Supply for Installation in Hazardous Areas YPSC01-X



Supported models	CAIXS2 SignumEx IS-X
Power supply	100 ~ 240 VAC (-10 / +10%)
Dust/waterproofing	IP65
Material	Stainless Steel
Operating temperature	0~40°C
Cable length	Primary side: 3 m, Ø 10 mm, open terminal
	Secondary side: 3 m, Ø 8 mm, with Amphenol female connector

* Consult with us if considering extending the cable length.

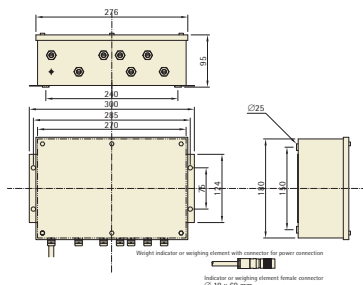


Intrinsically Safe Explosion-Proof Power Supply for Installation in Safe Areas YPSC01-Z



Supported models	CAIXS2 SignumEx IS-X
Power supply	100 ~ 240 VAC (-10 / +10%)
Dust/waterproofing	IP65
Material	Stainless Steel
Operating temperature	0 ~ 40°C
Cable length	Primary side: 3 m, 10 mmØ, with power outlet
	Secondary side: 20 m, 8 mmØ, with Amphenol female connector

* Consult with us if considering extending the cable length.



Desktop Printer YDP20-0CE



- Plain paper printer
- Can print date, time, serial number and statistical calculations

Printer Consumables

Jl-L56006	Roll paper x 10 rolls, ink ribbon x 2
Jl-L56010	Ink ribbon x 2
Jl-YDP03-BAT	Rechargeable nickel metal hydride battery 4 pieces
Jl-L560013	Dust-free paper x 40 rolls

Signum-Ex Series International Standard: IEC Ex Accredited

High accuracy explosion-proof integrated platform scale with aluminum monolithic comparable to analytical balances as the weighing principle

Weighing Range: 0.6 to 35 kg

Features

- Overload protection 300 kg
- Max. resolution: 620,000
- Dustproof/waterproof structure
- Plate material SUS specification (AISI304)
- Fully stainless steel specification also available
- Built-in weight is available as options



Display Type 3



Model	Weighing Range (kg)	Readability (g)	Loading Platform Dimensions (mm)	Body Weight (kg)	Platform Material	Protection Class
SIWXSBBP-3-06-H	0.62	0.001	Ø115	9	Aluminum die-cast (SUS plate)	IP43/IP65
SIWXSBBP-3-3-H	3.1	0.01	180 x 180	9	Aluminum die-cast (SUS plate)	IP65/IP65
SIWXSBBP-3-3-H	3.1	0.01	180 x 180	9	Fully stainless steel	IP65/IP65
SIWXSBBP-3-6-H	6.1	0.01	180 x 180	9	Aluminum die-cast (SUS plate)	IP65/IP65
SIWXSBBP-3-6-H	6.1	0.01	180 x 180	9	Fully stainless steel	IP65/IP65
SIWXSBBP-3-35-H	35	0.1	350 x 240	15	Aluminum die-cast (SUS plate)	IP65/IP65
SIWXSBBP-3-35-H	35	0.1	370 x 260	15	Fully stainless steel	IP65/IP65

IS-X Series ATEX Explosion-Proof Specification Electromagnetic Type Platform Scale

High accuracy explosion-proof electromagnetic platform scale with aluminum monolithic balance comparable to analytical balances as the weighing principle. Weighing range: 34 to 300 kg



Features

- ATEX explosion-proof standard EEx ib IIC T4
- Max. resolution: 640,000
- Dustproof/waterproof structure
- Plate material SUS specification (AISI304)
- Includes a built-in weight function that can be used for calibration and adjustments

Model	Weighing Range (kg)	Readability (g)	Platform Dimensions (mm)	Body Weight (kg)	Protection Class
IS34EDE-HX	34	0.1	400 x 300	16	IP65/IP67
IS64EDE-HX	64	0.1	400 x 300	16	IP44/IP67
IS64EDE-SX	64	1	400 x 300	16	IP65/IP67
IS150IGG-HX	150	1	800 x 600	70	IP67/IP67
IS300IGG-HX	300	2	800 x 600	70	IP67/IP67

Checkweighers Metal Detectors X-Ray Inspection Systems



Checkweigher Flexus® / Synus® series

High Accuracy Checkweigher, Metal Detector Integrated Type Flexus® Combi



Features

- Hygienic design for easy cleaning and the highest level of quality in your production operations
- Safety and reliability thanks to EMFC load cell technology
- The ideal solution every time – for your application configure Flexus® Combi
- Easy to combine with metal detection technology Vistus®

Checkweighing and metal detection in a single system

- With Flexus® Combi, you can check the weight and/or integrity of your product and optimise your filling processes. At the same time, all metal foreign bodies, including ferrous and non-ferrous metals and even non-magnetic stainless steels, are reliably detected.
- Flexus® Combi is incredibly easy to integrate into your production environment. Changes to line configurations and quick transitions between products are handled with minimal effort.
- Its hygienic design ensures easy inspection and cleaning.
- The high-resolution EMFC load cell technology and the extremely sturdy construction guarantee precise weighing results and a high throughput of up to 600 pieces per minute.

High Accuracy Checkweigher SYNUS Series, Metal Detector Integrated Type CoSYNUS Series



SYNUS® Series
High Accuracy Checkweigher



CoSYNUS® Series
Metal Detector Integrated Type Checkweigher

Standard Specifications

- Housing is AISI304 (SUS304 equivalent) for IP65
 - Batch control
 - Pulse control
 - Statistical data output
 - Memory for 200 product types
- Not to mention various other functions

Options

- Thermal printer (IP65)
 - Fieldbus interface
Profibus, DeviceNet
 - Data communication
Ethernet, TCP/IP
 - FDA21 CFR Part 11
- Various other options are also available



Designed for hygiene and easy connection/disconnection of conveyor belts, while exhibiting excellent maintainability.



Metal detector integrated types allow both settings of checkweigher and metal detector with the one operating panel. (CoSYNUS Series)

Metal Detector Vistus® Series / Secus Series

High Accuracy Premium Metal Detector Vistus Series



Vistus Conveyor Type Metal Detector

In addition to the high performance functions that cover a wide range of frequency bands (60 to 1000 kHz), this next generation metal detector features simple operation made possible by the LCD color touch panel



5.7" color touch panel display

Vistus-E

Standard Specifications

- Housing: AISI304 (SUS304 equivalent)
- Batch control
- Pulse control
- Statistical data output
- Memory for 200 product types

Others



Vistus R
Free fall type metal detector
with separator



Waterproof design IP65

Supports washing with water as standard

Optional IP69K

Design withstands high pressure jet cleaning

Dust-proof

explosion-proof specification

ATEX Zone 22

Conducting dust Group IIIC

Metal Detector Secus Series



- Search coil frequency: 5 / 15 / 50 kHz
- More than 100 types of search coil dimensions
- Divisible search coils (Secus D)
- Easily installed on existing conveyors
- Compatible with harsh environments (vibration/noise)

X-Ray Inspection System Dymond® Series / Dylight

High Performance X-ray Inspection System Dymond® Series / Dylight



Dymond S / Dymond D

- Reliable inspection with a high throughput
- Maximum safety through multi-sided radioscopy (Dymond D) opens up new possibilities in product design
- Seamless integration and installation
- Quick and easy cleaning thanks to the hygienic design
- Industry 4.0 ready



Dymond

- Extremely high level of detection sensitivity with low energy consumption
- Reliable detection of a wide range of foreign objects for your packaged products
- From large to small: the perfect solution for every product size
- Easy and intuitive operation by teaching in the products



Dylight

- Extremely compact design
- Plug and Play: All functions in one unit
- Takes up only one metre of space in your production line
- Complete with separator and run-off container
- Maximum product safety thanks to the highest degree of detection sensitivity
- Intuitive, time-saving operation
- Easy installation and integration into networks

Total Support for Your Electrical Scales

ISO9001
ISO14001
ISO13485
ISO22000
ISO/IEC17025
ISO/TS16949
GLP/GMP
USP
HACCP
EHEDG

"For Scale Use with Peace of Mind"

Currently almost all electronic scales have digital indicators, so they are often used without attention to error.

Also, various quality management systems (QMS) are evolving daily to become more globalized and advanced, defining the various requisite criteria for scale usage and continued management.

MinebeaMitsumi provides support services in order to allow our customers to use our scales with peace of mind, contributing to complete QMS support!



Weighing Hopper, Platform Scale Service

With years of effective service and experienced engineers, we can respond quickly to provide support for new installations, regular inspections, adjustments and repairs. Scales can be used at their best through inspection and adjustment by the load cell manufacturers and system manufacturers.



Periodic Inspection Service

This is a maintenance service in which our technicians, certified at our advanced technological level, inspect and adjust instruments to suit the customer's environment, regardless of the type/manufacturer of the scale.



Repair Service

The repair center handles product repairs.

Options

- IQ/OQ Validation Support
- Minimum Weight

We measure the minimum weighing value required by USP (US Pharmacopoeia) at the installation site of the balance, and issue a certificate.

► For details on calibration fees, etc, please inquire separately.