Minebea intec
The true measure

Bench scale Signum®

The compact solution for numerous applications

Explosion protection

GERMAN QUALITY

German Quality

Signum® is the compact solution for numerous industries. Within everyday weighing applications, the bench scale stands out thanks to its short measurement times, flexibility and safety. Depending on the application, the weight indicator can be set up independently from the location of the platform and can even be mounted on a stand. Supreme, Advanced or Regular models are available depending on the level of precision required.

The right solution for all of these applications:

- Weighing
- Counting
- Filling and dosing
- Formulation
- Fill quantity control
- Classification

Technical specifications

General technical data for bench scale Signum®

Parameters	Description
Material	Stainless-steel weight indicator Weighing platform SIW(X).BBP/SIW(X).DCP: – Powder coating resistant against impact, scratches and abrasion, colour: NCS S3502-B (RAL 7040), – Stainless-steel load plate SIW.EDG: Galvanised steel SIW(X).BBS/SIW(X).DCS: – Stainless steel AISI304, brushed
Weight indicator	Provided, with bolting plate or optional columns to mount on the platform
Humidity	85% relative (non-condensing) to 31°C; 50% relative to 40°C
Use at altitudes above sea level	Up to 2,000 m; in interior spaces
Weighing system	SIW(X)S... : monolithic weighing system* SIWA... : mechatronic load cell SIWR... : standard load cell
Resolution (non-verifiable)	SIW(X)S. : up to 620,000 d, depending on model SIWA. : up to 150,000 d, depending on model SIWR. : up to 35,000 d, depending on model
Resolution (verifiable, class II, III)	SIWS. : up to 62,000 e, depending on model SIWR. : up to 7,500 e, depending on model
Emissions	In accordance with EN 61326-1, class B (IEC 61326-1)
Electrical safety	In accordance with EN 61010-1 (IEC 61010-1)
Immunity to interference	In accordance with EN 61326-1, industrial areas (IEC 61326-1)
IP protection rating	SIW(X).BBS/SIW(X).DCS: IP65 SIW.BBP/SIW.DCP: IP43, optional IP65 (not for SIW.BBP 0.6 kg) SIWX.BBP/SIWX.DCP: IP65 (SIWX.BBP 0.6 kg: IP4X) SIW.EDG: IP65
Net weight/gross weight	SIW(X).BBS: 9.0 kg/10.8 kg SIW(X).DCS: 15.0 kg/17.4 kg SIW.BBP: 6.8 kg/8.6 kg SIW.DCP: 11.0 kg/12.0 kg SIW.EDG: 12.5 kg/14.4 kg
Data interfaces	SIW... : RS 232 (standard) Optional: – RS 232 – RS 485/422 – Analogue output 0/4...20 mA, 0-10 V, 16 bit – Digital I/O (5 inputs and 5 outputs) – Profibus DP – Ethernet TCP/IP and Modbus TCP – PS/2 – Second built-in A/D converter (for bulk counter) SIWX...: RS232 (standard, switchable to RS485/422)
Internal Alibi memory	Optional 130,000 data sets (not for SIWXS...)
Power supply	SIW... : 100 – 240 V_{AC} (–15%/+10%), 50 – 60 Hz, max. 17 W/23 VA, via integrated power supply unit Optional: – 24 volt power supply – Integrated battery SIWX... : 100 – 240 V_{AC} (–15%/+10%), 50 – 60 Hz, via external power supply unit, in or outside potentially explosive atmospheres Optional: – 24 volt power supply, in or outside potentially explosive atmospheres – External battery in explosion hazard zone
Cable length	2 m between weight indicator and weighing platform
Miscellaneous	– 4 x height-adjustable levelling feet – Levelling equipment – Overload protection

* all SIWS...CE verified at the factory with integrated motorised weight calibration

The weight indicator and weighing module of the bench scale Signum® are fully mechanically separate and only connected by a cable.

Benefits:

1. The weighing result cannot be corrupted by vibrations, even with rough operation.
2. The positioning of the weight indicator can be adjusted to all spacial conditions and enables ergonomic working at all times

Flexibly positionable weight indicator
Freely positionable with 2 m long connection cable

Base-mounted weight indicator
Secure attachment via a bracket (not for SIWAEDG)

Raised weight indicator
Column with protected cable routing and continuously adjustable tilt angle (optional)

Weight indicators for bench scale Signum®

Weight indicator Signum® 1

Weight indicator Signum® 2

Weight indicator Signum® 3

User interface	Level 1*	Level 2*	Level 3
Keyboard	6 keys	14 keys	28 keys Numerical keyboard
Display	14 segments 20 mm weight readout	14 segments 20 mm weight readout plus application symbols	14 segments 20 mm weight readout plus application symbols

Applications	Level 1*	Level 2*	Level 3
Weighing	●	●	●
Data transfer to printer/PC	●	●	●
ISO test	●	●	●
Counting		●	●
Percentage weighing		●	●
Averaging		●	●
Checking		●	●
Totalising		●	●
Combination of 3 applications			●
Sample weight and counting to target value (from memory)		●	●
SQ-Min (sample quantity minimum)	●	●	●
Identifier (4 × 40 characters)			●
Product data memory			●
Date/Time		●	●
Bulk counter connection (optional)		●	●
Internal Alibi memory (optional)		●	●

* not for SIW.EDG... and SIWX...

Weighing platforms Signum® SIW(X).BBP/SIW(X).BBS

Weighing platform Signum® SIW(X).BBP...

Weighing platform Signum® SIW(X).BBS...

Non-verifiable models Order code weighing range		SIW(X)SBBP-*-06	SIW(X)SBBP-*-3 SIW(X)SBBS-*-3	SIW(X)SBBP-*-6 SIW(X)SBBS-*-6
Order code resolution		-H	-H	-H
Maximum weighing range	kg	0.62	3.1	6.1
Readability	g	0.001	0.01	0.01
Maximum additive preload	kg	0	3	0
Reproducibility	< ± g	0.001	0.01	0.01
Non-linearity	< ± g	0.002	0.02	0.02
Calibration weight	g	500	2,000	5,000
Accuracy class of calibration weight		E2	E2	E2
Max. load bearing capacity	kg	3	30	30
Platform dimensions SIW(X)SBBP (W×D×H) Platform dimensions SIW(X)SBBS (W×D×H)	mm	266×236×146	266×236×117 280×250×123	266×236×117 280×250×123
Operating temperature range	°C	0...+40	0...+40	0...+40
Storage temperature range	°C	-10...+40	-10...+40	-10...+40
IP protection rating SIW(X)SBBP IP protection rating SIW(X)SBBS		IP43	IP43, optionally IP65 IP65	IP43, optionally IP65 IP65

Verifiable models Order code weighing range		SIWSBBP-*-06	SIWSBBP-*-3 SIWSBBS-*-3	SIWSBBP-*-3 SIWSBBS-*-3	SIWSBBP-*-6 SIWSBBS-*-6	SIWSBBP-*-6 SIWSBBS-*-6
Order code resolution		-HCE	-HCE	-ICE	-HCE	-SCE
Maximum weighing range	kg	0.62	3.1	3.1	6.1	6.1
Readability	g	0.001	0.01	0.1	0.01	0.1
Accuracy class		II	II	II	II	II
Calibration value e		0.01	0.1	0.1	0.1	0.1
Minimum load		0.02	0.5	5	0.5	5
Maximum additive preload	kg	0	3	3	0	0
Reproducibility	< ± g	0.001	0.01	0.01	0.01	0.01
Non-linearity	< ± g	0.002	0.02	0.02	0.02	0.02
Calibration weight	g	500	2,000	2,000	5,000	5,000
Accuracy class of calibration weight		E2	E2	E2	E2	E2
Max. load bearing capacity	kg	3	30	30	30	30
Platform dimensions SIWSBBP (W×D×H) Platform dimensions SIWSBBS (W×D×H)	mm	266×236×146	266×236×117 280×250×123	266×236×117 280×250×123	266×236×117 280×250×123	266×236×117 280×250×123
Operating temperature range Accuracy class II	°C	+10...+30	+10...+30	+10...+30	+10...+30	+10...+30
Operating temperature range, without verification	°C	0...+40	0...+40	0...+40	0...+40	0...+40
Storage temperature range	°C	-10...+40	-10...+40	-10...+40	-10...+40	-10...+40
IP protection rating SIWSBBP IP protection rating SIWSBBS		IP43	IP43, optionally IP65 IP65	IP43, optionally IP65 IP65	IP43, optionally IP65 IP65	IP43, optionally IP65 IP65

Weighing platforms Signum® SIW(X)SDCP/SIW(X)SDCS

Weighing platform Signum® SIW(X)SDCP...

Weighing platform Signum® SIW(X)SDCS...

Order code weighing range		SIWSDCP-*-6 SIWSDCS-*-6	SIWSDCP-*-6 SIWSDCS-*-6	SIWSDCP-*-16 SIWSDCS-*-16	SIW(X)SDCP-*-35 SIW(X)SDCS-*-35	SIWSDCP-*-16 SIWSDCS-*-16	SIWSDCP-*-35 SIWSDCS-*-35
Order code resolution		-S	-SCE	-H	-H	-HCE	-HCE
Maximum weighing range	kg	6	6	16	35	16	35
Readability	g	0.1	0.1	0.1	0.1	0.1	0.1
Accuracy class		-	II	-	-	II	II
Calibration value e	g	-	1	-	-	1	1
Minimum load	g	-	5	-	-	5	5
Maximum additive preload	kg	0	0	5	5	5	5
Reproducibility	< ± g	0.1	0.1	0.2	0.2	0.2	0.2
Non-linearity	< ± g	0.2	0.2	0.2	0.2	0.2	0.2
Calibration weight	g	5,000	5,000	10,000	10,000	10,000	10,000
Accuracy class of calibration weight		F2	F2	F1	F1	F1	F1
Max. load bearing capacity	kg	300	300	300	300	300	300
Platform dimensions SIWSDCP (W×D×H)	mm	350×240×134	350×240×134			350×240×134	350×240×134
Platform dimensions SIWSDCS (W×D×H)				370×260×149	370×260×149	370×260×149	370×260×149
Operating temperature range Accuracy class II	°C	-	+10…+30	-	-	+10…+30	+10…+30
Operating temperature range, without verification	°C	0…+40	-	0…+40	0…+40	-	-
Storage temperature range	°C	-10…+40	-10…+40	-10…+40	-10…+40	-10…+40	-10…+40
IP protection rating SIWSDCP		IP43 optionally IP65	IP43 optionally IP65			IP43 optionally IP65	IP43 optionally IP65
IP protection rating SIWX-SDCP SIW(X)SDCS				IP65	IP65	IP65	IP65

Weighing data for bench scale Signum® Advanced SIWABBP/SIWADCP/SIWAEDG

Bench scale Signum® Advanced SIWABBP		
Capacity code	-1	-8
Resolution code	-H	- I
Weighing range (kg)	1.5	8
Readability (g)	0.01	0.1
Calibration weight (g)	1,000	5,000
Accuracy class	F1	F2
Preload (kg)	0	3
Reproducibility (g)	0.03	0.2
Linearity (g)	0.03	0.3
Ambient temperature	-10 °C to +40 °C	

Bench scale Signum® Advanced SIWADCP				
Capacity code	-7	-16	-35	65
Resolution code	-S	-S	-S	-S
Weighing range (kg)	7	16	35	65
Readability (g)	0.1	0.2	0.5	1
Calibration weight (g)	5,000	5,000	10,000	20,000
Accuracy class	F2	F2	F2	F2
Preload (kg)	–	–	–	–
Reproducibility (g)	0.2	0.4	1	2
Linearity (g)	0.3	0.6	1.5	3
Ambient temperature	-10 °C to +40 °C			

Bench scale Signum® Advanced SIWAEDG			
Capacity code	-16	-35	-65
Resolution code	-S	-S	-S
Weighing range (kg)	16	35	65
Readability (g)	0.2	0.5	1
Calibration weight (g)	5,000	10,000	20,000
Accuracy class	F2	F2	F2
Preload (kg)	–	–	–
Reproducibility (g)	0.4	1	2
Linearity (g)	0.6	1.5	3
Ambient temperature	-10 °C to +40 °C		

Weight data for bench scale Signum® Regular SIWRDCP

Bench scale Signum® Regular SIWRDCP – Non-verifiable models							
Capacity code	-3	-6	-6	-15	-15	-35	-35
Resolution code	- I	- R	- I	- R	- I	-R	- I
Weighing range (kg)	3	6	6	15	15	35	35
Readability (g)	0.1	1	0.2	2	0.5	5	1
Calibration weight (g)	2,000	5,000	5,000	5,000	5,000	10,000	10,000
Accuracy class	M1	M2	M1	M2	M1	M2	M1
Preload (kg)	1.2	1.2	1.2	3	3	6	6
Reproducibility (g)	0.2	0.2	0.2	0.2	0.2	1	1
Linearity (g)	0.3	0.4	0.4	0.8	0.8	1.5	1.5
Ambient temperature	-10 °C to +40 °C						

Bench scale Signum® Regular SIWRDCP – Verified models				
Capacity code	-6	-15	-35	-60
Resolution code	-RCE	-RCE	-RCE	-RCE
Weighing range (kg)	6	15	35	60
Readability (g)	1	2	5	10
Calibration value (g)	1	2	5	10
Calibration weight (g)	6,000	15,000	35,000	60,000
Accuracy class	M2	M2	M2	M1
Preload (kg)	1.2	3	6	6
Reproducibility (g)	0.2*	0.2*	1*	1*
Linearity (g)	0.4*	0.8*	1.5*	1.5*
Ambient temperature (only for use in situations where verification is required)	-10 °C to +40 °C			

* according to EN 45501

Technical diagrams

Bench scale Signum®

SIWSDCS/SIWXSDCS

SIWSDCP/SIWXSDCP/SIWRDCP/SIWADCP

All dimensions in mm

SIWAEDG

SIWSBBP/SIWXSBBP 620 g

All dimensions in mm

SIWSBBP/SIWXSBBP 3 kg/6 kg

SIWSBBS/SIWXSBBS

All dimensions in mm

Options

Interfaces for bench scale Signum® SIW.BBP/SIW.DCP/SIW.BBS/SIW.DCS

COM 1	Order reference	Level 1		Level 2		Level 3	
		IP43	IP65	IP43	IP65	IP43	IP65
RS232*	A11	Standard	Standard				
RS232, real-time clock*	A31			Standard	Standard	Standard	Standard
RS232, real-time clock + PS2*	A32			•	•	•	•
RS232, real-time clock + PS2**	A32				Standard		Standard

* for SIW.BBP/SIW.DCP (with IP65 protection rating upon request)
** for SIW.BBS/SIW.DCS

UniCOM	Order reference	Level 1		Level 2		Level 3	
		IP43	IP65	IP43	IP65	IP43	IP65
RS232	A1	•	•	•	•	•	•
RS422	A2	•	•	•	•	•	•
RS485	A3	•	•	•	•	•	•
Digital 5 inputs/5 outputs	A5	•	•	•	•	•	•
Analogue output	A9	•	•	•	•	•	•
Profibus DP	B1	•	•	•	•	•	•
Ethernet TCP/IP*	B9	•	•	•	•	•	•

* for SIW.BBP/SIW.DCP with IP65 protection rating upon request

2. Weighing point	Order reference	Level 1		Level 2		Level 3	
		IP43	IP65	IP43	IP65	IP43	IP65
Analogue second scale interface	A15			•	•	•	•

Equipment for bench scale Signum® SIW.BBP/SIW.DCP/SIW.BBS/SIW.DCS

Description	Order reference	Level 1		Level 2		Level 3	
		IP43	IP65	IP43	IP65	IP43	IP65
Protection class IP65*	I65	•		•		•	
24 volt power supply	L8	•	•	•	•	•	•
Internal battery pack	L9	•	•	•	•	•	•
Separable connection second scale connection	X1			•	•	•	•
Underground weighing mechanism	U1	•		•		•	
Protection class ATEX zone 2 and zone 22**	Y2		•		•		•
Integrated motorised weight calibration (only for models SIWS..., integrated as standard for -*CE version)	E7	•	•	•	•	•	•
Internal Alibi memory***	E5	•	•	•	•	•	•
Ethernet connection cable with RJ45 connector, 7 m for SIWSBBS/SIWSDCS	M38		•		•		•

* not for SIWABBP (1.5 kg) and SIWSBBP (620 g)
** not for SIWABBP and SIWSBBP (620 g)
*** not for SIWXS...

A/D converter (A15) and battery pack (L9) cannot be combined

Final production test report for bench scale Signum®

Description	Order reference	Level 1		Level 2		Level 3	
		IP43*	IP65	IP43*	IP65	IP43*	IP65
Final production test report	Z3	•	•	•	•	•	•

Accessories

Interfaces for bench scale Signum® SIW.BBP

Description	Order reference
RS232	YDO03SW-232
RS485/RS422	YDO03SW-485/422
Digital 5 inputs/5 outputs	YDO03SW-DIO
Analogue output	YDO03SW-AO
Profibus DP	YDO03SW-DP
Ethernet TCP/IP for DCP* models	YDO03SW-ETH

Interfaces for bench scale Signum® SIW.DCP/SIWAEDG

Description	Order reference
RS232	YDO01SW-232
RS485/RS422	YDO01SW-485/422
Digital 5 inputs/5 outputs	YDO01SW-DIO
Analogue output	YDO01SW-AO
Profibus DP	YDO01SW-DP
Ethernet TCP/IP for DCP* models	YDO01SW-ETH
Ethernet TCP/IP for EDG models	YDO02C-ETH

* for SIW.DCP with IP65 protection rating upon request

Cable for bench scale Signum® SIW.BBP/DCP

Description	Order reference
Connection cable for various accessories, 25-pin D-SUB socket, 1.5 m	7357312
Connection cable for printer YDP21 or PC, 9-pin D-SUB socket, 1.5 m	7357314
Connection cable for printer YDP05, YDP14IS, 9-pin D-SUB connector, 3 m	YCC01-01CISLM3
Connection cable from RS232 to USB interface, USB connector 2 m	YCC01-USBM2

Cable for bench scale Signum® SIWAEDG

Description	Order reference
Connection cable for printer YDP21 or PC, 9-pin D-SUB socket, 6 m	YCC02-D09F6
Connection cable for printer YDP05, YDP14IS, 9-pin D-SUB connector, 6 m	YCC02-D09M6
Connection cable for bar code reader YBR05FC	YCC02-BR02
Connection cable for various accessories, 25-pin D-SUB socket, 1.5 m	YCC02-D25F6
Ethernet connection cable, cable gland on RJ45 connector, 7 m	YCC02-RJ45M7

Cable for bench scale Signum® SIWSBBS/DCS

Description	Order reference
Connection cable to PC, 12-pin round connector to 25-pin D-SUB socket, 5 m	YCC01-03ISM5
Connection cable to PC, 12-pin round connector to 9-pin D-SUB socket, 5 m	YCC01-09ISM5
Connection cable for printer YDP21, 9-pin D-SUB socket, 2 m	YCC01-0019M3
Connection cable for printers YDP05, YDP14IS, 9-pin D-SUB connector	69Y03142
Extension cable, 12-pin round connector to 12-pin round socket, 6 m	YCC01-01ISM6
Ethernet connection cable, cable gland on RJ45 connector, 7 m	YCC02-RJ45M7

Printers for bench scale Signum®

Description	Order reference
Needle high-speed matrix printer	YDP21
Strip/label printer, with thermal direct printing, 60 mm paper width	YDP05
Strip/label printer, with thermal direct printing, 108 mm paper width	YDP14IS-0CEUV
Strip/label printer, with thermal transfer printing, 108 mm paper width	YDP14IS-0CEUVTH

Mechanical accessories for bench scale Signum®

Description	Order reference
Column for type BBP, aluminium, height 400 mm	YDH02P
Column for type BBS, stainless steel, height 400 mm	YDH02S
Column for type DCP, aluminium, height 500 mm	YDH01P
Column for type DCS/EDG, stainless steel, height 330 mm	YDH01CWS
Column for type DCS/EDG, stainless steel, height 500 mm	YDH02CWS
Column for type DCS/EDG, stainless steel, height 750 mm	YDH03CWS
Stainless-steel wall bracket for weight indicators (slanted installation surface)	YDH01CIS
Stainless-steel wall bracket for weight indicators, tiltable weight indicator	YDH02CIS
Stainless-steel wall bracket for weight indicators (flat installation surface)	YDH04CIS
Kit for control panel display unit installation	YAS03MI
Dust covers for display unit (2 items, not for SIWXS...)	YDC01SW

Electrical accessories for bench scale Signum®

Description	Order reference
Second display	YRD03Z
External red-green-yellow display	YRD04
Bar code reader, 120 mm reading range with PS/2 connector	YBR05PS2
Bar code reader, 120 mm reading range with 5-pin round connector, for SIWSBBS/DCS	YBR05FC

Software for bench scale Signum®

Description	Order reference
Minebea Intec OPC Server	6289OPC
SartoConnect 4.0	YSC03

Ex solutions

Explosion protection

Ex application areas for bench scale Signum® SIWS/SIWA/SIWR with option Y2

Zone	Labelling
2	ATEX: II 3G Ex nA ic IIC T4 Gc
22	ATEX: II 3D Ex tc IIIC T80°C Dc

Ex application areas for bench scale Signum® EX SIWXS

Zone	Labelling
1	IECEx / Europe (ATEX): (II 2 G) Ex ib IIC T4 USA (FM): IS CL I, II, III, DIV 1 GP A,B,C,D,E,F,G T4 / CL I, zone 1 AEx ib IIC T4 / CL II, zone 21 (only IP6X models) Canada (CSA): Ex ia CL I, II, III, DIV 1 GP A,B,C,D,E,F,G T4 / Zone 1, Ex ib IIC T4 / zone 21 (only IP6X models)
21	IECEx / Europe (ATEX): (II 2D) Ex ib IIIC T80°C Db (only IP6X models)

Options

Interfaces for bench scale Signum® EX SIWXS			
COM 1	Order reference	Level 3	
		IP43	IP65
RS232	A1	•	•
RS422	A2	•	•
RS485	A3	•	•

Equipment for bench scale Signum® EX SIWXS	
Description	Order reference
Integrated motorised weight calibration	E7
Final production test report	Z3

Accessories

Power supply for bench scale Signum® EX SIWXS		
Description		Order reference
Power supply units for installation in potentially explosive atmospheres 100 – 240 volt	Europe (ATEX) USA (FM) Canada (CSA)	YPSC01-X YPS02-XUR YPS02-XKR
Power supply unit for installation in potentially explosive atmospheres 24 volt	Europe (ATEX)	YPS02-XV24
Battery for installation in potentially explosive atmospheres	ATEX/FM/CSA	YBR02-X
Power supply units for installation outside potentially explosive atmospheres	Europe (ATEX) FM/CSA	YPSC01-Z YPS02-ZKR

Equipment for bench scale Signum® EX SIWXS	
Description	Order reference
Ex interface converter for installation in safe areas	YDI05-Z

Ordering information

Ordering system legend for bench scale Signum®

Product line	Explosion protection	Sensor technology	Platform dimensions in mm Order code	Material/ Version		Applications		Weighing range (kg)		Display resolution
SIW	X	A	BB	G	–	1	-	06	-	H
		R	DC	P		2		1		I
		S	ED	S		3		6		R
								7		S
								8		HCE
								15		ICE
								16		RCE
								35		SCE
								60		
								65		

Example order code SIWSBBP-2-6-H:

Resolutions	
-R	≥ 6,000 d divisions
-I	≥ 30,000 d divisions
-S	≥ 60,000 d divisions
-H	≥ 100,000 d divisions

Resolutions	
-RCE	6,000 e, class III, e = d
-ICE	≥ 30,000 e, class II, e = d
-SCE	≥ 60,000 d, class II, e = 10 d
-HCE	≥ 100,000 d, class II, e = 10 d

Material/Version	
G	Galvanised steel
P	Painted
S	Stainless steel

The products and solutions presented in this data sheet make major contributions in the following sectors:

The technical data given serves as a product description only and should not be understood as guaranteed properties in the legal sense.

Specifications subject to change without notice.
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