

TOX®-Sensors

Data sheet 110.00
2019/08



Table of contents

Pressure indicator ZDA	3
Electronic pressure switch ZDO	4
External linear position sensor ZHW	5
Linear position sensor ZKW	6
Potentiometer travel measurement ZW-x	7
External, analog displacement transducer ZWW	8
Press force sensor ZPS	9
Anti-rotation device ZPSV	10
TOX®-Press Force Sensor CKN	11
TOX®-Miniature Force Sensor CKNM	12
TOX®-Press Force Sensor ZKNW	13
3 in 1 tool fixture ZAK with force sensor	14
Strain Sensor ZKN	15
Precision limit switch ZWE	16
Proximity switch ZHS for forward and return stroke monitor ZHU	17

Pressure measurement

Pressure indicator ZDA

The function keys on the front part of the pressure indicator are used for programming. The function “instantaneous value storage” is available for recording variable measuring signals. Further tests are possible with the peak value memory. An analogue output (4...20mA, 0...10V) is available for connection with a PLC. As option, a serial interface for the transmission of the measured data to a PC is available.



Application

- TOX®-Powerpackage

Technical data:

- 5-digit display, 2-colors
- Peak value memory
- Analogue input
- 2 programmable set points
- Analogue output for SPS

Sampling rate:	10/s
Supply voltage:	90 ... 264VAC, 50/60 Hz
Dimensions (W x H x D):	96x48x187 mm
Panel cutout:	92+0.5 x 45+0.5 mm

Pressure sensor ZDS

The oil pressure in the high pressure chamber of the TOX®-Powerpackage is measured by the pressure sensor and is displayed by a 5-digit display on the pressure indicator with integrated power supply. The measured “pressure” is displayed in bar or kN.

Technical data:

Pressure range:	0 – 400 bar
Connection:	M12x1 plug
Analogue output:	4 – 20 mA
Deviation from characteristic:	1 % FS*
Repeat accuracy:	0,1 % FS*
Supply voltage:	12 – 30 VDC (by ZDA)

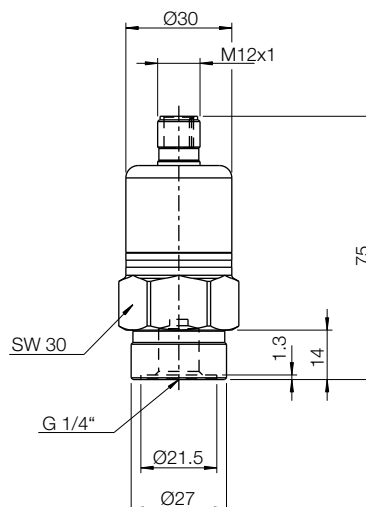
* FS = Full Scale

Scope of delivery:

- Pressure indicator ZDA
- Transducer ZDS, incl. mounting plate ZMP
- HP measuring hose ZHM 630, connection 1 x 90°, compl. assembled, filled and bled
- Connection cable between transducer and pressure indicator

Option:

- Serial interface



Example for ordering

ZDA-230AC
 └── Supply voltage
 └── Pressure indicator

When ordering please do not forget to specify the type of TOX®-Powerpackage.

Pressure measurement

Electronic pressure switch ZDO

Application

- TOX®-Powerpackage

Programmable functions

- LED display unit bar, psi, Pa
- Switching logic PNP
- Maximum value memory
- LED display can be flipped 180°
- LED display off

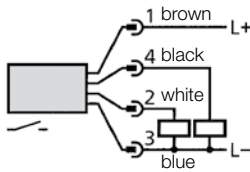
Failure is displayed if:

- System pressure > 10% of max. nominal pressure
- Short circuit in switch output 1 or switch output 2

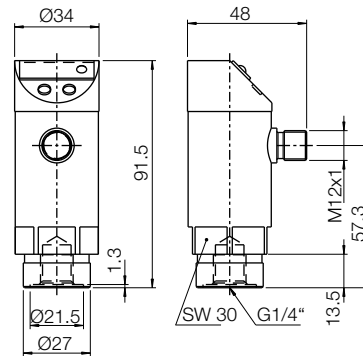
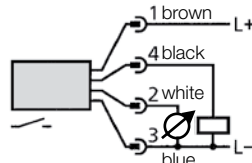


Connection scheme:

ZDO 01



ZDO 01.400A
with analog output



Dimensions in mm

Technical data:

Type	ZDO 01.010	ZDO 01.400	ZDO 01.600	ZDO 01.400A
Full Scale (bar):	-1 – 10	0 – 400	0 – 600	0 – 400
Increment (bar):	0.01	1	1	1
Repetive accuracy:	± 0,1 % FS*	< ± 0,25 % FS*	< ± 0,25 % FS*	< ± 0,1 % FS*
Switch point accuracy:	± 0,5 % FS*	± 1,5 % FS*	± 1,5 % FS*	< ± 0,5 % FS*
Display:	LED 7-Segments			
Delay time:	0 - 50 s			
Supply voltage:	18 – 30VDC			
Protection class:	IP65	IP67	IP67	IP67
Switching function per output:	hysteresis / normally closed window function / normally closed		hysteresis / normally open window function / normally open	
	in addition analog output 4 – 20mA/0 – 10V			

* FS = Full Scale

Example for ordering

ZDO 01.400A

- With SP2 as analog output
- Max. pressure 400 bar
- Version 01
- Electronic pressure switch

Distance measurement

External linear position sensor ZHW

The external linear position sensor provides the absolute position of the working piston in the TOX®-Powerpackage even after power failure. Due to the external mounting on the TOX®-Powerpackage, the mounting position can be adapted to the conditions inside the press.

By default, the linear position sensor is mounted on the front service side of the TOX®-Powerpackage. For the TOX®-Powerpackage types Q-S, X-S, X-AT and RZS the sensor can be mounted on one of three sides. For the types Q-K and X-K, two mounting sides are possible.

Function:

The piston position is determined via a special barrel and a magnetic ring on the working piston.

It is also possible to combine this linear position sensor type ZHW with the end position sensor option type ZHU.

Application

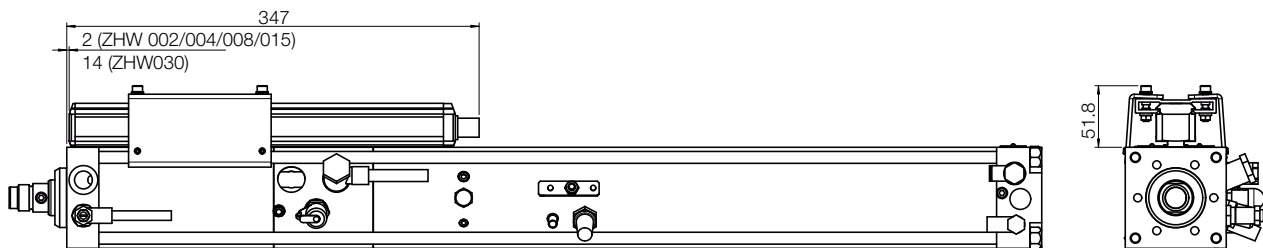
- TOX®-Powerpackage line-X, line-Q
- TOX®-Presses
- TOX®-Tongs



Advantages:

The linear position sensor provides non-contact sensing technology resulting in the following features:

- Wear-free
- Resistant to contamination



Dimensions in mm

Technical data:

Repeat accuracy:	± 10 µm
Supply voltage:	10 ... 30V (stabilized)
Linear deviation:	≤ ± 0.15 mm
Protection class: (in connected condition)	IP67
Output	
Output voltage:	0 ... 10V
Load current:	≤ 5 mA

Pin assignment connector S32 (view to connector at sensor) for shielded cable (max. 20m) Ø6 to 8mm.



Delivery condition ZHW:

The TOX®-Powerpackage is delivered with the sensor's output voltage of 0 ... 10V already calibrated for the total stroke.

Scope of delivery:

- Sensor with right angle connector 90°
- Mounting bracket

Option USB communication box/PC software

see page 5

Note:

When using the accessory ZHW, the effective total stroke of the TOX®-Powerpackage has to be reduced by 20mm. The power stroke remains the same. In order to achieve the described repeat accuracy and linear deviation it is necessary to prevent the working rod of the TOX®-Powerpackage from rotating.

Output signal

Pin	Cable	Interface
1	YE yellow	not used
2	GY grey	0V
3	PK pink	10 ... 0V
4	RD red	La ⁽²⁾
5	GN green	0 ... 10V

Supply voltage (external)

Pin	Cable	Interface
6	BU blue	GND ⁽¹⁾
7	BN brown	10 ... 30V
8	WH white	Lb ⁽²⁾

⁽¹⁾ Reference potential for supply voltage and EMV-GND.
⁽²⁾ La = Lb = communication line

Example for ordering

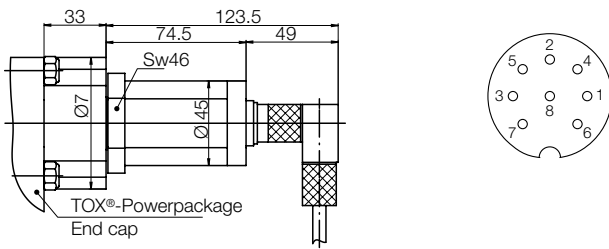
Q-S 002.030.100.12 – ZHW



Distance measurement

Linear position sensor ZKW

The linear position sensor ZKW determines the actual position of the TOX®-Powerpackage piston, even after a power failure. The measuring system works contactless. Therefore it is free of wear, insensitive to dirt and interferences. Final values are adjustable. CANopen and PROFIBUS-DP interfaces are available on request.



Dimensions in mm

Technical data:

Repeat accuracy:	± 10 µm
Supply voltage:	20 ... 28V DC (stabilized)
Remaining ripple:	≤ 0.5V _{ss}
Current consumption:	≤ 150 mA
GND against housing:	500V
Output	
Output voltage:	0 ... 10 and 10 ... 0V
Electric strength:	≤ 5 mA
Load current in connected condition):	IP67

Application



- TOX®-Powerpackage type K
- TOX®-Presses
- TOX®-Tongs

View of soldered connection of the bush body.

Connector S 32 for shielded cable (max. 20m) Ø 6 to 8mm.

Output signal

pin	cable	
1	YE yellow	not occupied
2	GY grey	0V
3	PK pink	10 ... 0V
4	not occupied	
5	GN green	0 ... 10V

Supply voltage (external)

pin	cable	
6	BU blue	GND (1)
7	BN brown	+ 24V DC
8	WH white	GND

(1) Reference potential for distribution voltage and EMV-GND

Scope of delivery:

Sensor with connector, 90° angled.

Order no.

K 2.100.8 - **ZKW**

└── Path measuring system
└── Order no. of TOX®-Powerpackage

Option USB communication box/PC software

The option USB communication box provides two outputs via USB interface.

Output 1 for total stroke; output 2 freely configurable (e.g. for the last 5 mm of the stroke).



Features of the USB communication box with PC software:

- Online display of the current sensor position
- Graphical support for adjusting functions and characteristics
- Simple parameterising
- Freely configurable characteristics
- Two individually usable and adjustable outputs

System requirements:

- Operating system Windows 7 or better
- Min. screen resolution 1024 x 768 pixel
- 10MB free hard drive space
- Java Runtime Environment version 1.4.2 or newer
- USB interface

Distance measurement, Accessory, electrical

Potentiometer travel measurement ZW-x

Easy mounting to return stroke lock and press head. Scope of delivery: travel sensor, cable incl. plug M8x1, mounting bracket, cable guard and cable accessory.

Application

- TOX®-FinePress



Toggle Presses

Type	for press type
ZW-K 075.001	KFS 002 KFSU/KFLU/KFWU 008
ZW-K 075.002	KFSU/KFLU025

Rack and Pinion Presses

Type	for press type
ZW-Z 075.000	ZFS 002
ZW-Z 100.000	ZFS/L/W 004

Pneumatic Presses

Type	for press type
ZW-P 080.000	PFL/W 008 PFL013 PFL022 PFL056
ZW-P 100.000	PFS 002 PFL/W 004

Pneumatic Presses with manual approach

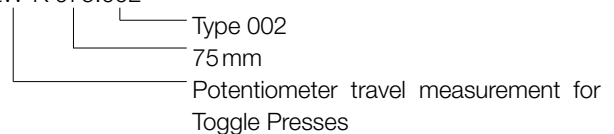
Type	for press type
ZW-PH 075.000	PFHL/W 008 PFHL 013 PFHL 022 PFHL 056

Technical data:

Type:	Travel sensor ZW-P/ZW-Z100	Travel sensor ZW-PH/ZW-K075/ZW-Z075
Electric range:	100 mm + -1 mm	75 mm + -1 mm
Output voltage:	0 ...10V, 10V ... 0V	10 ...0V, 0V ... 10V
Linearity tolerance:	+ -0.1%	+ -0.1%
Resolution:	< 0.01 mm	< 0.01 mm
Mechanical travel:	105 mm	80 mm

Example for ordering

ZW-K 075.002



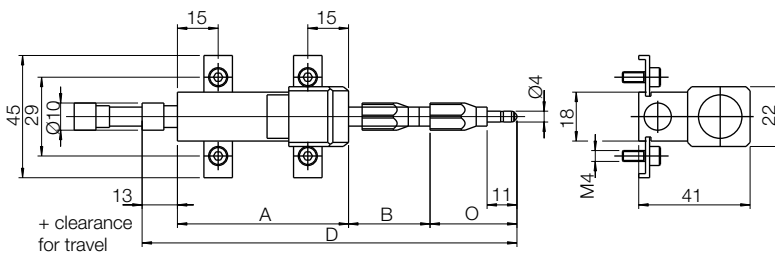
Distance measurement, Accessory, electrical

External, analog displacement transducer ZWW

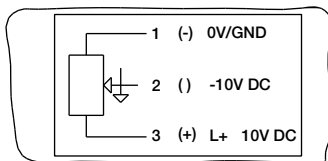
The displacement transducer ZWW indicates the absolute instantaneous position of the working rod or ram, even during power failure. The measurement system is almost wear-free, and it is not sensitive to dirt or interference. The sensor is mounted externally in a die set or on the working rod.

Application

- TOX®-Powerpackage
- TOX®-Presses



Wiring diagram



Wire colors:

- PIN 1 – Supply voltage
- PIN 2 + Signal output
- PIN 3 + Supply voltage

Type	Measuring range	A	B	C	D
ZWW 010.000	10 mm	48	15	32	108
ZWW 025.000	25 mm	63	30	32	138
ZWW 050.000	50 mm	88	55	40	196
ZWW 100.000	100 mm	138	115	40	307

Technical data:

Repeatability:	±0.01 mm
Supply voltage:	10VDC
Resistance:	1 kΩ – 5 kΩ
Linearity:	0.1 – 0.3% full scale
Connection:	plug, 5 pin, Binder 10-09-2013-00-05
Protection:	IP54

Scope of delivery:

- Sensor
- Connector
- Mounting

Example for ordering

ZWW 100.000
 Variant
 100mm
 Description

Force measurement

Press force sensor ZPS

The press force sensor ZPS can be mounted directly on the working piston of the TOX®-Powerpackage.

It is possible to measure the press forces in push and pull direction. The sensor is sealed against dirt and moisture. The anti-rotation device ZPSV is recommended to avoid damage of the connection cable (see next page).

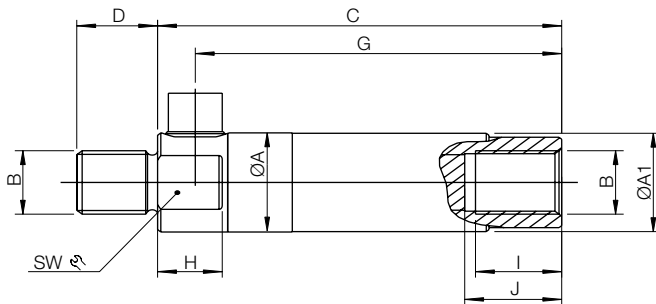
Application

- TOX®-Powerpackage
- TOX®-ElectricDrive
- TOX®-Presses

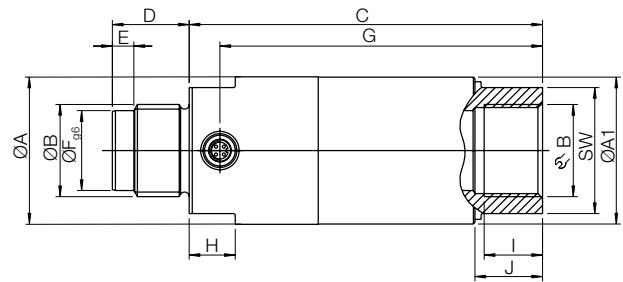


Advantages:

- Highly precise
- Robust
- Compact



ZPS 001 / ZPS 002



ZPS 004 - ZPS 200

Type	Press force max. kN	ØA	ØA1	B	C	D	E	ØFg6	G	SW	H	I	J	Retracting force max. kN
ZPS 001	13	20	20.7	M12x1.5	60	12	-	-	53	16	8	10	14	9
ZPS 002	21	25	25.7	M16x1.5	75	15	-	-	68	21	12	13	16	20
ZPS 004	52	30	31	M22x2	90	20	7	18	83	26	14	14	16	25
ZPS 008	81	48	49	M30x2	115	25	7	26	105	41	15	19	22	40
ZPS 015	160	48	49	M30x2	115	25	7	26	105	41	15	19	22	40
ZPS 030	325	58	60	M39x2	130	35	-	-	120	50	20	36	40	110
ZPS 050	500	68	70	M42x2	150	40	-	-	136	55	20	42	59	110
ZPS 100	1030	100	102	M64x2	180	60	-	-	155	85	22	63	66	245
ZPS 200	2000	150	152	M80x2	220	80	-	-	200	140	28	83	88	350

Dimensions in mm

Technical data:

Rated output:	1.1 mV/V
Temperature range:	-10° to +65°
Zero balance:	± 2 %
Supply voltage:	10VDC (max. 15V)
Insulation resistance:	1 GΩ
Nominal impedance:	760Ω
Electric connection:	System Fischer
Combined error:	< ± 0.5 %
Overload:	115 %
Protection class:	IP54

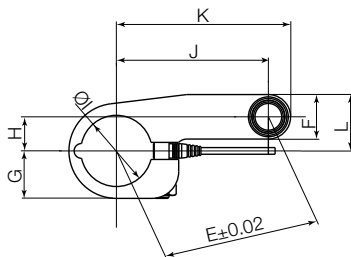
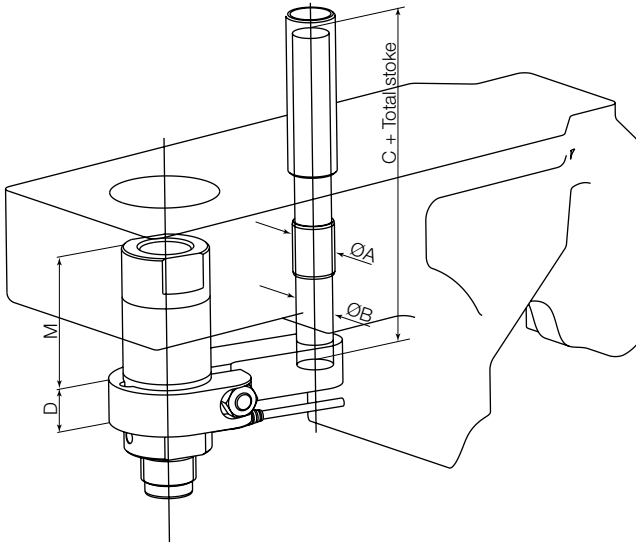
Force measurement

Anti-rotation device ZPSV

Prevents damage to the sensor cable. The center of the guide bushing bore must be set at dimension E from the centerline of the sensor. When ordering, please advise the total stroke of the TOX®-Powerpackage.

Application

- TOX®-Powerpackage
- TOX®-ElectricDrive
- TOX®-Presses



Scope of delivery:

- Anti rotation device
- Guide bushing
- Shaft

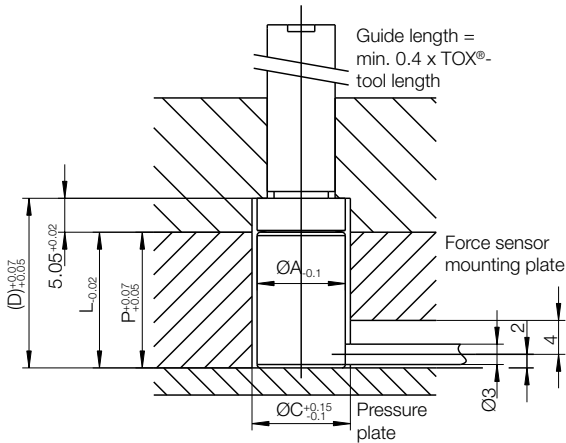
Type	For press force sensor type	ØA _{H7}	ØB	C	D	E	F	G	H	ØI	J	K	L	M
ZPSV 001	ZPS 001	14	12	70	17	52	18	19	17	20	49.14	58.14	26	37
ZPSV 002	ZPS 002	14	12	85	17	52	18	21	17	25	49.14	58.14	26	49
ZPSV 004	ZPS 004	18	16	100	19	80	24	23	20	30	77.46	89.46	32	59
ZPSV 008	ZPS 008	23	20	90	24	105	30	32	23	48	102.45	117.45	38	75
ZPSV 015	ZPS 008 ZPS 015	23	20	90	24	110	30	32	23	48	107.57	122.57	38	75
ZPSV 030	ZPS 030	28	25	150	24	170	38	37	27	58	167.84	186.84	46	85
ZPSV 050	ZPS 050	28	25	150	24	180	38	42	27	68	177.96	238.96	46	105
ZPSV 100	ZPS 100	28	25	338	24	235	38	58	39	100	231.74	250.74	39	122
ZPSV 200	ZPS 200	on request												

Dimensions in mm

Force measurement

TOX®-Press Force Sensor CKN

In-Die sensor for TOX®-Punch or TOX®-Die. This force transducer specially developed by TOX® PRESSOTECHNIK allows measurement of relatively high forces under critical space requirements.



Application

- TOX®-Powerpackage
- TOX®-ElectricDrive
- TOX®-Presses
- TOX®-Tongs

Type	Rated capacity max. kN	ØA	ØB	L	ØC	D	P
CKN 027.000	27	13	3	25	13	30	25
CKN 040.000	40	15	3	25	15	30	25
CKN 055.000	55	17	3	30	17	35	30
CKN 072.000	72	19	3	30	19	35	30
CKN 091.000	91	21	3	35	21	40	35
CKN 112.000	112	23	3	35	23	40	35
CKN 140.000	140	26	3	35	26	40	35
CKN 150.000	150	27	3	40	27	45	40
CKN 190.000	190	30	3	40	30	45	40

Dimensions in mm

Requirements:

- Press force +20% < rated capacity of the sensor
- Included 5 pin connector
- Cable 2 m long
- Sensor must be installed in such a way that no side-, torsion-, or pre-loads are present

Technical data:

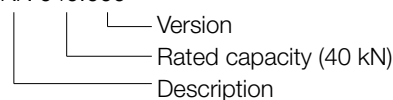
	I	U
Rated output:	8 mV at 12 mA excitation	2.2 - 2.7 mV/V
Supply voltage:	-	5V
Excitation current:	12 mA	-
Temperature range:	+10 °C to 65 °C	
Zero balance:	±3%	
Insulation resistance:	>5x10 ⁹ Ω	
Nominal impedance:	350 Ω	
Combined error:	≤ ±2%	
Overload:	120%	
Protection:	IP54	

Wire colors:

- black + Supply voltage
- red - Supply voltage
- white + Signal output
- green - Signal output

Example for ordering

CKN 040.000



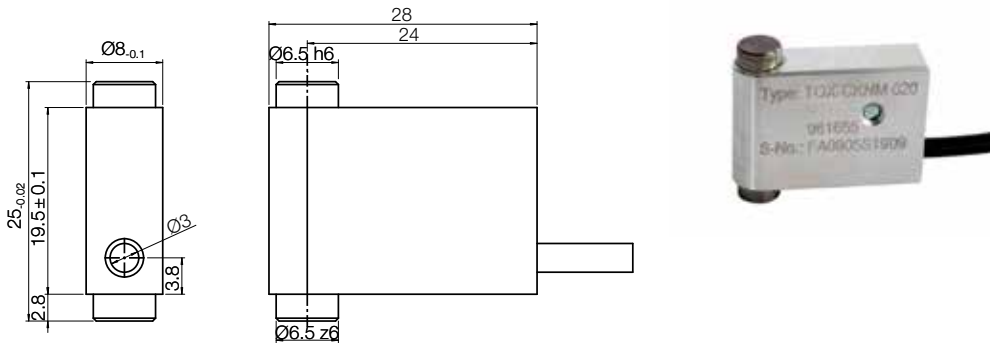
Force measurement

TOX®-Miniature Force Sensor CKNM 20

Compact miniature sensor for use in very small tools.

Application

- TOX®-Powerpackage
- TOX®-ElectricDrive
- TOX®-Presses
- TOX®-Tongs



Technical data:

Rated output:	2.5 mV/V
Temperature range:	+10 °C to 65 °C
Zero balance:	±0.25 mV/V
Supply voltage:	10V
Nominal impedance:	1000 Ω
Linearity:	±2 % F.S.
Overload:	120 %
Protection:	IP54

Wire colors:

white	+ Supply voltage
brown	- Supply voltage
yellow	+ Signal output
green	- Signal output

Order no.

CKNM 20

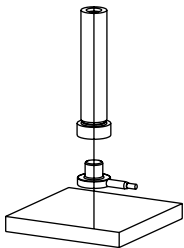
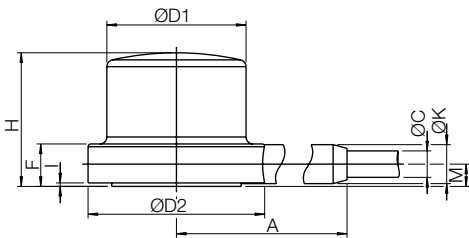
Force measurement

TOX®-Press Force Sensor ZKNW

Compact miniature sensor for use in very small tools.

Application

- TOX®-Powerpackage
- TOX®-ElectricDrive
- TOX®-Presses
- TOX®-Tongs



Example: sensor under TOX®-Die

Type	Rated capacity max. kN	ØD1	ØD2	F	A	H	I	ØC	ØK	M
ZKNW 001.000	1	6.4	12.7	3.05	42.5	9.6	0.25	1.9	3.5	1.6
ZKNW 002.000	2	6.8	12.7	3.05	42.5	9.6	0.25	1.9	3.5	1.6
ZKNW 005.000	5	7.7	12.7	3.05	42.5	9.6	0.25	1.9	3.5	1.6
ZKNW 010.000	10	10.0	12.7	3.05	42.5	9.6	0.25	1.9	3.5	1.6
ZKNW 020.000	20	14.0	15.9	6.0	43.3	16.0	0.25	1.9	3.5	3.1
ZKNW 050.000	50	19.7	22.4	6.0	43.4	16.0	0.25	1.9	3.5	3.1
ZKNW 100.000	100	26.5	44.0	15.0	52.5	38.0	0.50	3.0	3.5	7.5

Dimension in mm

Technical data:

Rated output:	1,5 mV/V
Temperature range:	+10 °C to 65 °C
Zero balance:	± 1 %
Supply voltage:	3VDC (max. 5VDC)
Insulation resistance:	>10 MΩ
Nominal impedance:	350 Ω
Combined error:	≤ ±0.5 %
Overload:	150 %
Protection:	IP54

Wire colors:

white + Supply voltage
 brown – Supply voltage
 yellow + Signal output
 green – Signal output

Example for ordering

ZKNW 010.000
 └── Version
 └── Rated capacity 10kN)
 └── Description

Force measurement

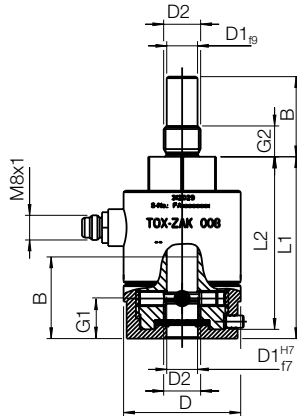
3 in 1 tool fixture ZAK with force sensor

Application

- TOX®-FinePress

Scope of delivery:

- Force sensor
- Cable incl. plug M8x1 and mounting bracket
- Cable guard
- Cable accessory



Type	Nominal force of sensor	For press type	Nominal force of press	Measuring accuracy (depending on press)	B	D	D1	D2	G1	G2	L1	L2
ZAK 001*	1.0 kN	for special applications		0.5%	26	55	10	M12x1	13	10	74	71
ZAK-K04.000*	4.0 kN	KFS 002	2.5 kN	0.8%	26	55	10	M12x1	13	10	86	83
ZAK-Z04.000*	4.0 kN	ZFS 002 ZFS/L/W 004	2.5 kN 4.0 kN	0.8% 0.5%	26	55	10	M12x1	13	10	86	83
ZAK-P04.000*	4.0 kN	PFS 002 PFL/W 004	2.0 kN 4.0 kN	1.0% 0.5%	26	55	10	M12x1	13	10	86	83
ZAK-K08.000	8.0 kN	KFSU/LU/WU 008 PFHL/W 008	8.0 kN 8.5 kN	0.5% 0.5%	26	38	10	M12x1	13	10	59	56
ZAK-K16.000	16.0 kN	PFHL 013	13.5 kN	0.6%	26	38	10	M12x1	13	10	59	56
ZAK-P16.000	16.0 kN	PFL/W 008 PFL 013	8.5 kN 13.5 kN	0.9% 0.6%	26	38	10	M12x1	13	10	59	56
ZAK-K25.000	25.0 kN	KFSU/LU 025	25.0 kN	0.5%	26	38	10	M12x1	13	10	59	56
ZAK-K34.000	34.0 kN	PFHL 022	22.5 kN	0.8%	26	50	14	M16x1.5	15.5	12	67.5	62
ZAK-P34.000	34.0 kN	PFL 022	22.5 kN	0.8%	26	50	14	M16x1.5	15.5	12	67.5	62
ZAK-K57.000	57.0 kN	PFHL 056	57.5 kN	0.5%	26	50	14	M16x1.5	15.5	12	67.5	62
ZAK-P57.000	57.0 kN	PFL 056	57.5 kN	0.5%	26	50	14	M16x1.5	15.5	12	67.5	62

*The types ZAK-..001/04 provide a mechanical overload protection. As a result, the guidance accuracy is reduced.

Technical data:

Rated output:	1,10 mV/V
Temperature range:	-10° C – 65° C
Supply voltage:	10VDC

Example for ordering

ZAK - K08

- Nominal force 8 kN
- For Toggle Presses
- Tool force sensor with fixture

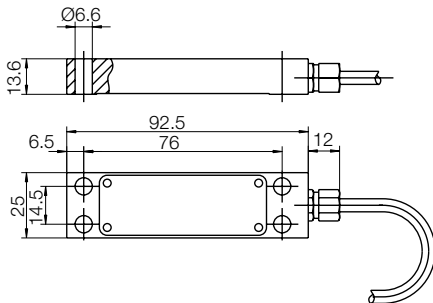
Force measurement, Accessory electrical

Strain Sensor ZKN

The surface sensor measures the strain between two bolted locations. The measured signal is proportional to the elongation of the structure. The sensor can measure elongation and compression, and provides the respective signal.

Assembly instructions:

The strain sensor ZKN must be mounted on a machined surface with a minimum ISO surface finish of N9 and a maximum flatness tolerance of 0.05 mm. The tightening torque should be 14 + 1 Nm. Use mounting screws M6x25 with a grade of 10.9 or higher.



Application

- TOX®-Powerpackage
- TOX®-ElectricDrive
- TOX®-Presses
- TOX®-Tongs



Wire colors:

Passive (pull and press):

- brown + Excitation
- green - Excitation
- yellow + Signal output
- white - Signal output

Active (pull and press):

- white + Supply voltage
- rosa - Supply voltage (GND)
- grey + Signal output
- blue - Signal output (OV)
- green - Tara-Signal

Technical data:

Passive:

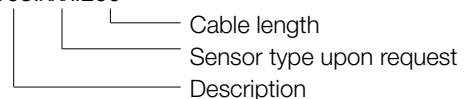
Rated output:	1.25 mV/V (250 µE)
Temperature range:	+ 10 °C to 65 °C
Zero balance:	± 100 % possible
Supply voltage:	5VDC (max. 10VDC)
Insulation resistance:	>10 MΩ
Nominal impedance:	350 Ω
Combined error:	≤ ± 2 %
Overload:	120 %
Standard cable length:	2 m
Protection:	IP67

Active:

Rated output:	10V (250 µE)
Temperature range:	+ 10 °C to 65 °C
Zero balance:	± 100 % possible
Supply voltage:	max. 24VDC ≤ 30 mA
Insulation resistance:	>10 MΩ
Combined error:	≤ ± 2 %
Overload:	120 %
Standard cable length:	2 m
Protection:	IP67

Example for ordering

ZKN 103.xxx.200



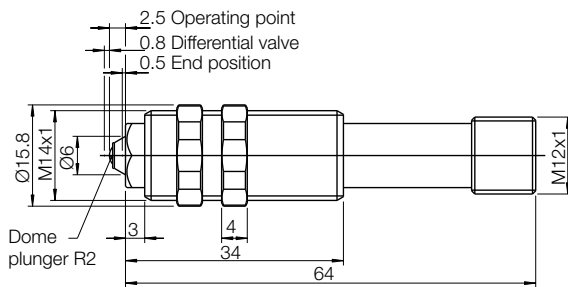
Distance measurement, Accessory electrical

Precision limit switch ZWE

This precision limit switch ZWE can be used to monitor the control dimension X for clinching applications.

Application

- TOX®-Powerpackage
- TOX®-Presses
- TOX®-FinePress



Wiring diagram



Wire colors:

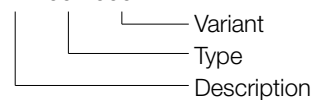
- PIN 1 + Supply voltage
- PIN 4 - Switching signal

Technical data:

Operating voltage:	18 ... 30VDC
Switching current min. at 1 mV:	1 mA
Operating point accuracy:	± 0.01 mm
Mechanical life:	≥ 10 million
Actuating force:	10 N
Mounting position:	optional
Connection:	M12 round plug
Protection:	IP54

Example for ordering

ZWE 001.000



Position sensor, Accessory electrical

Proximity switch ZHS for forward and return stroke monitor ZHU

Attached to the working piston permanent magnet is which is detected by the sensors through the special tube.

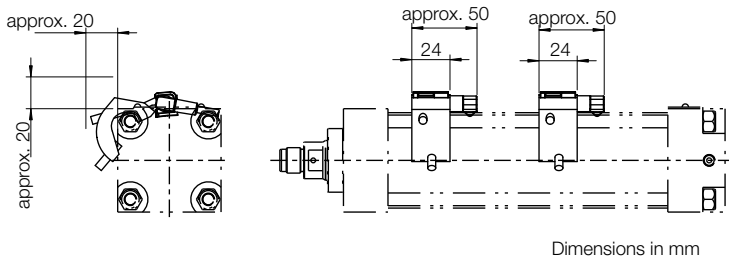
Application

- TOX®-Powerpackage
- TOX®-Presses
- TOX®-FinePress
- TOX®-Tongs

Notes:

The total stroke of the TOX®-Powerpackage is shortened by the ZHU installation:

- For types S/K/AT 01–30 up to 10 mm
- For types HZ 05–48 with total stroke up to 200 mm by 20 mm
- For series line-Q and line-X no stroke reduction is required



Technical data:

Supply voltage:	10–30VDC
Residual ripple:	≤ 15 %
Max. admissible current:	max. 200 mA
Turn-on time:	≤ 0.5 ms
Turn-off time:	20–50 ms
Hysteresis:	0,5...1 mm
Plug connection:	With LED, M 8 according to DIN 43 650 IP65

Options:

- Proximity switch, magnet-sensitive, with LED, ZHS 001.000
- Holding angle ZMP for proximity switch ZHS
- Cable box M8 x 1 with 5 m cable, straight

Order no.

S 1.32.6 - **ZHU**

