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Sensors

Industrial sensors

Acceleration sensors

When masses in motion get out of control, they are highly dangerous. To ensure that they remain under control, their state has to be monitored and measured. SCHMIDT® acceleration sensors and SCHMIDT® vibration monitors offer reliable collection and processing of data for safe operations.

	BS 10.01	**BS 10.021**	**BS 10.022**	**BS 10.031**	**BS 10.032**	**BS 10.04**	**BS 10.052**	**BS 10.053**
Measuring range **Detection limit**	0 ... ±100 g	0 ... ±100 g 0.05 g	0 ... ±10 g 0.0075 g	0 ... ±100 g 0.0075 g	0 ... ±100 g 0.0075 g	0 ... ±100 g 0.0075 g	0 ... ±15 g 0.0075 g	0 ... ±15 g 0.0075 g
Measuring range (t)						-40 ... +120 °C		
Sensitivity	10 pc/g	40 mV/g	400 mV/g	40 mV/g	40 mV/g	40 mV/g	667 mV/g	667 mV/g
Frequency range	5 ... 10,000 Hz	0.2 ... 15,000 Hz	2 ... 15,000 Hz	3 ... 6,000 Hz	3 ... 6,000 Hz	3 ... 6,000 Hz	3 ... 100 Hz	3 ... 100 Hz
Output	Charge	0 ... ±4V true zero point	0 ... ±4V true zero point	0 ... ±4V two-wire	0 ... ±4V two-wire	0 ... ±4V two-wire	0 ... ±10V	0 ... ±10V
Power supply		11 ... 26 V DC unipolar	11 ... 26 VDC unipolar	2 ... 20 mA uni-polar	2 ... 20 mA uni-polar	2 ... 20 mA uni-polar	±15V	±15V
Temperature range	–35 ... +85 °C	–40 ... +85 °C	–40 ... +85 °C	–10 ... +85 °C	–40 ... +120 °C	–40 ... +120 °C	0 ... +80 °C	0 ... +80 °C
Mass-insulated	no	yes*	yes*	yes	yes	yes	yes	yes
Mounting	1 x M4	2 x M6	2 x M6	1 x M8	1 x M8	1 x M8	1 x M6	1 x M6
Other information	without amplifier	reverse-connection safe short-circuit proof	reverse-connection safe short-circuit proof	reverse-connection safe	reverse-connection safe	reverse-connection safe	integrated filter –36 dB/octave	external filter –60 dB/octave
Accessories		Connection module, Isolation Kit	Connection module, Isolation Kit	Current module	Current module			

* optional

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Sensors

Industrial sensors
Vibration monitors

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	VibroSens 401	**VibroSens 402**	**BS 10.10 / BS 10.021**
Measuring range (Veff)	0 ... 50 mm/s	0 ... 50 mm/s	2 ... 200 mm/s
Frequency range	10 ... 1000 Hz	10 ... 1000 Hz	10 ... 1000 Hz, 1 ... 100 Hz, 3 ... 30 Hz
Start delay	10 s fixed	2 ... 60 s adjustable	–
Switch delay	1 ... 11 s adjustable	1 ... 12 s adjustable	10 s adjustable
Preliminary alarm		yes	yes
Main alarm	yes	yes	yes
Reset	automatic	automatic or manual	manual
Output	1 x relay changer analogue: 0...20 mA	2 x relay changer analogue: 0 (4)...20 mA	2 x relay changer analogue: 0...20 mA
Power supply	20 ... 30 VDC	20 ... 30 VDC	24 VDC ±5%
Temperature range	–5 ... +75 °C	–10 ... +85 °C	-10...+60 °C (electronics) -40...+85 °C (sensor)
Mass-insulated	yes	yes	yes*
Mounting	2 x M6	threaded pin M10	profile rail (electronics) 2 x M6 (sensor)

* optional

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Sensors

Industrial sensors

Flow sensors / Display module

Reliable measurement systems are required for process-related monitoring and control of flow velocity. These must be resistant to environmental influences. SCHMIDT® flow sensors have no moving parts and make consistent use of thermal measuring technology and modern thin-film technology. The modular design of with SMD electronics and microcontrollers makes economical problem-solving possible, even in the most complex applications.

Flow sensors		**SS 20.01**	**SS 20.011**	**SS 20.501**	**SS 20.502**	**SS 20.60**	**Display module**	**SS 20.031**
Measuring range	flow [Nm/s]	0 ... 20	0 ... 20	0 ... 1/2.5/10/20/35	0 ... 1/2.5/10/20/35	0... 2.5/10/20/40/60	**Display**	LED red, 8-digit
	temperature[°C]	–40 ... +85	–40 ... +85				**Input**	Suited for on pulse output SS 20.60
Measuring head	direction independent	•	•	•	•		**Function**	Consumed quantity in Nm^3
	protective coating		•		•			Flow rate in Nm^3/h
	pressure resistance [bar]		10	10	10	16	**Switch output**	Trans. pnp 24 VDC / 50 mA
	pipe diameter min. [mm]	60	60	60	60	25	**Pulse output**	Trans. pnp 24 VDC / 50 mA
	separate possible			•	•	•	**Programming**	Pipe diameter and sensor measuring range
Output signal	non-linear	•	•				**Datastorage**	10 years
	linear			•	•	•	**Mounting**	Built-in
	voltage [V]	0 ... 10	0 ... 10	0 ... 10	0 ... 10	0 ... 10	**Supply voltage**	24 VDC
	current [mA]			0 (4) ... 20	0 (4) ... 20	0 (4) ... 20	**Power consumption**	6 W
	pulse [Hz]					10/16/20/40/100	**Operating temp.**	0 ... 50 °C
	switch output/S0 [Hz]					10/16/20/40/100	**Housing**	Polycarbonate, black
Temperature range [°C]	measuring head	–40 ... +85	–40 ... +85	–20 ... +85	–20 ... +85	–20 ... +85/120	**Non-flammability**	UL 94 V-0
Type of connection	cable	•	•	•	•		**Weight**	320 g
	plug and cable			•	•	•	**Dimensions**	72 x 72 x 108 mm^3
Housing		plastic	plastic	aluminium	aluminium	aluminium		
Mounting flange		•	•	•	•	•		
Protective system				IP 65	IP 65	IP 65		

• available

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Sensors

Automotive sensors

For the SCHMIDT® automotive sensors, we have adapted products from different sensor groups specially for the requirements of the automotive industry. Thanks to this "made to measure" work, we have qualified as a supplier of automotive sensors both for vehicle development and serial production.

Application	Product type	Product technology, short description	Key data
Airbag electronics	**Safing sensors** BS 12.021, BS 12.023 BS 12.011, BS 12.013	- Spring-mass reed-contact system (patented) - Added safety in critical collision situations - 3-D sensor simulation with actual crash files	- Static switch point from 2 g - Response time 10 ms - Switch current 7-15 A
	Trigger sensor BS 15.0x	- Without magnet and reed contact - Spring-mass system (patented) - Shorter response time than saving sensor - High EMV safety	- Static switch point from 1.6 g - Response time 8 ms - Switch current 10 A
Rollover bar	**Position sensor** BS 13.01	- Tilt cone with magnet and holding element	- Switch angle 22.5 ° - Transistor-switch output
Belt tightener	**Acceleration sensor** BS 10.01	- Piezoelectric compression type	- 0 ... 100 g - 0.2 ... 15 000 Hz
Emergency-call system **Central-locking system**	**Angle sensor** BS 14.011 (22°), BS 14.012 (53°) BS 14.013 (57°), BS 14.014 (64°)	- LED-beam interruption by tilt cone - High EMV safety through optical process - Reaction-free switching	- Static switch angle between 20 ° and 65° (application-specific) - Logical switch output
Engine management	**Acceleration sensor / knock sensor** BS 10.01	- Piezoelectric compression type	- 0 ... 100 g - 0.2 ... 15 000 Hz
	IDS (integrated sealing head gasket sensor)	- Piezoelectric sensor	- Integrated in cylinder-head gasket
	Mass-current sensor	- Calorimetric mass current sensor	
Air-conditioning unit	**Flow-measurement sensor** SS 20.xx	- Calorimetric air-flow sensor for flow speed and volume current	- Flow speed 0.1 ... 60 m/s