



Accessories for HYDAC handheld meas. units

HYDAC offers an extensive range of accessories for the handheld measuring units and data recorders, tailored to the respective application of the handheld measuring units for measuring tasks on hydraulic and pneumatic systems and machines, both in the industrial and mobile sector.

Sensors with automatic sensor detection

The pressure, temperature and flow rate transmitters with HSI sensor detection were specifically developed for use in connection with the HYDAC measuring units HMG 5x0, 2500, 31X0 und 4000.

For data transmission purposes, these sensors have a HSI interface (HYDAC sensor interface). The HSI sensor is automatically detected by the HYDAC measuring devices and all necessary device settings are then made independently by the measuring instrument.

In order to extend the number of sensors on the HMG 4000, the special can protocol based HCSI sensors (HYDAC CAN sensor interface) have been developed.

These HCSI sensors, easily recognisable on the red type label, are automatically detected by the HMG 4000, including all features.

Up to 28 HCSI sensors can be connected to the HMG 4000 simultaneously via the optional Y-distributors to set up an HMG internal bus system.

The data is transferred over a CAN-based bus protocol.

Other accessories

For use in the laboratory, commissioning, service and maintenance, our hand-held measuring units and data recorders have a wide portfolio of electrical and mechanical accessories as well as other components such as carrying straps, transport cases or protective films available.

For non-contact speed detection of rotating bodies, HYDAC also offers the HDS 1000 speed probe, which can be connected directly to the HYDAC measuring instruments HMG 2500, 31X0 and 4000.



Pressure transmitter

HDA 4700-H

With HSI-sensor detection

For HMG 2500 / 30X0 / 4000

Relative pressure

Accuracy 0.25%

Features

- Accuracy $\leq \pm 0.25$ % FS typ.
- Excellent EMC characteristics
- Designed for use with HYDAC measuring instruments

Description

The HDA 4700-H series pressure transmitter with HSI sensor detection was specially developed for use in conjunction with the HYDAC measurement devices HMG 5X0, HMG 2500, HMG 30X0 und HMG 4000.

For data transmission purposes, the HDA 4700-H is equipped with an HSI interface (HYDAC Sensor Interface).

Thanks to this, the HSI sensor is recognised fully automatically by the HYDAC measurement devices listed above and all necessary basic device settings are then undertaken automatically.

Like all pressure transmitter of the HDA 4700 series, the HDA 4700-H also has the very accurate and robust sensor cell with thin film DMS on a stainless steel membrane. It is characterised by excellent technical data as well as a small, compact design.

Application fields

Applications are mainly found in the mobile or industrial sector in hydraulics and pneumatics.

Measuring tasks in the service, maintenance, troubleshooting or test bench fields can be carried out, processed, displayed and evaluated especially in conjunction with the HYDAC measuring devices.

Technical data

Input data													
Measuring ranges	bar	-1..9	16	25	60	100	160	250	400	600	1000	1600	2000
Overload pressures	bar	20	32	50	120	200	320	500	800	1000	1600	2400	3000
Burst pressure	bar	100	100	125	300	500	800	1250	2000	2000	3000	3000	4000
Mechanical connection					G1/4 A ISO 1179-2 G1/2 B DIN-EN 837								
Tightening torque, recommended					20 Nm (G1/4); 45 Nm (G1/2)								
Parts in contact with fluid					Mech. connection: Stainless steel Seal: FKM								
Output data													
Output signal					HSI (HYDAC Sensor Interface) Automatic sensor detection								
Accuracy acc. to DIN 16086, Terminal based ¹⁾					≤ ± 0.25 % FS typ. ≤ ± 0.5 % FS max.								
Accuracy at minimum value setting (B.F.S.L.)					≤ ± 0.15 % FS typ. ≤ ± 0.25 % FS max.								
Temperature compensation zero point					≤ ± 0.008 % FS / °C typ. ≤ ± 0.015 % FS / °C max.								
Temperature compensation span					≤ ± 0.008 % FS / °C typ. ≤ ± 0.015 % FS / °C max.								
Rise time					≤ 1 ms								
Long-term drift					≤ ± 0.1 % FS typ. / year								
Environmental conditions / Approvals / Tests													
Compensated temperature range					-25..+85 °C								
Operating temperature range ²⁾					-40..+85 °C / -25..+85 °C								
Storage temperature range					-40..+100 °C								
Fluid temperature range ²⁾					-40..+100 °C / -25..+100 °C								
EMC					2014/30/EU EN 61000-6-1 / 2 / 3 / 4								
Vibration resistance					DIN EN 60068-2-6					≤ 200 m/s² (10..500 Hz)			
Shock resistance					DIN EN 60068-2-27					≤ 100 g / 6 ms			
Protection type ³⁾					DIN EN 60529					IP 67			
CE / UKCA conformity					Available								
cULus approval ⁴⁾					Available								
Other data													
Supply voltage					Via HYDAC measuring units HMG 5X0, HMG 2500, HMG 30X0 or HMG 4000								
Life expectancy ⁵⁾					> 10 million load cycles (0..100 % FS)								
Weight					~ 150 g								

Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.

FS (Full Scale) = relative to complete measuring range

B.F.S.L. = Best Fit Straight Line

¹⁾ Including non-linearity, hysteresis, offset and final value deviation

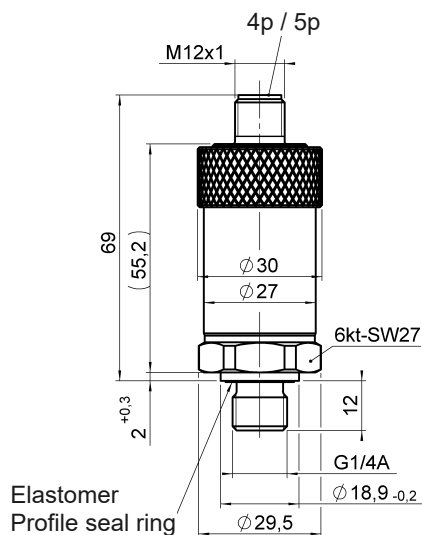
²⁾ In the standard up to -25 °C with FKM seal, -40 °C on request

³⁾ With mounted mating connector in corresponding protection type

⁴⁾ Environmental conditions acc. to 1.4.2 UL 61010-1; C22.2 no. 61010-1

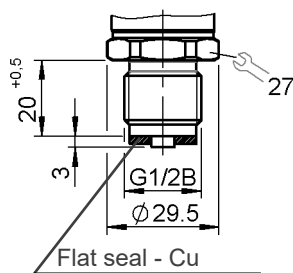
⁵⁾ Measuring ranges ≥ 1000 bar: > 1 million load cycles (0..100 % FS)

Dimensions



Mechanical connection variants

G1/2 B DIN EN 837 external thread
Tightening torque, recommended: 45 Nm



Model code

HDA 4 7 X 8 - H - XXX - 000

Mechanical connection

1 = G1/2 B DIN EN 837 (only for pressure ranges "1600 and 2000 bar")
4 = G1/4 A ISO 1179-2

Electrical connection

8 = Plug connector M12x1, 5 pole (without mating connector)

Output signal

H = HSI (automatic sensor detection)

Measuring ranges in bar

0009 (-1 .. 9); 0016; 0025; 0060; 0100; 0160; 0250; 0400; 0600; 1000
1600; 2000 bar (only with mech. connection type "1")

Modification number

000 = Standard

Accessories:

Appropriate accessories, such as mating connectors for electrical connection, can be found in the Accessories brochure.

Note

The information in this brochure relates to the operating conditions and applications described.
For applications and/or operating conditions not described please contact the relevant technical department.
Subject to technical modifications.

HYDAC ELECTRONIC GMBH
Hauptstrasse 27
D-66128 Saarbruecken
Phone: +49 (0)6897 509-1
Fax: +49 (0)6897 509-1726
Email: electronic@hydac.com
Website: www.hydac.com



Temperature transmitter ETS 4100-H

With HSI-sensor detection
For HMG 2500 / 30X0 / 4000

Temperature probe

Accuracy 0.4 %

Features

- Robust design
- Integrated temperature sensor
- Excellent EMC characteristics
- Designed for use with HYDAC measuring instruments

Description

The electronic temperature transmitter ETS 4100-H with HSI sensor detection was specially developed for use in conjunction with the HYDAC measurement devices HMG 5X0, HMG 2500, HMG 30X0 und HMG 4000.

For data transmission purposes, the ETS 4100-H is equipped with an HSI interface (HYDAC Sensor Interface).

Thanks to this, the HSI sensor is recognised fully automatically by the HYDAC measurement devices listed above and all necessary basic device settings are then undertaken automatically.

As is the case with all temperature transmitters of the ETS 4000 series, the ETS 4100-H is distinguished for its robust construction and its excellent EMC properties. Temperatures within a range of -25 °C to +100 °C can be measured by means of this temperature sensor based on a corresponding electronic evaluation unit.

Application fields

Wide field of applications in the mechanical engineering sector, such as:

- Hydraulics
- Pneumatics
- Cooler unit
- Compressors
- and much more

The temperature sensor is particularly used in systems where continuous, intelligent monitoring is necessary.

Measuring tasks in the service, maintenance, troubleshooting or test bench fields can be carried out, processed, displayed and evaluated especially in conjunction with the HYDAC measuring devices.

Technical data

Input data					
Measuring range	-25..+100 °C				
Probe length	mm	6	100	250	350
Probe diameter	mm	4.5	8	8	8
Pressure resistance	bar	600	125	125	125
Mechanical connection	G1/4 A ISO 1179-2 / external				
Tightening torque, recommended	20 Nm				
Parts in contact with fluid ¹⁾	Mech. connection: Stainless steel Seal: FKM				
Output data					
Output signal	HSI (HYDAC Sensor Interface) Automatic sensor detection				
Accuracy (at room temperature)	≤ ± 0.4 % FS typ. ≤ ± 0.8 % FS max.				
Temperature drift (environment)	≤ ± 0.01 % FS / °C				
Rise time acc. to DIN EN 60751	t ₅₀ : ~ 4 s t ₉₀ : ~ 8 s				
Environmental conditions / Approvals / Tests					
Operating temperature range ²⁾	-40..+85 °C / -25..+85 °C				
Storage temperature range	-40..+100 °C				
Fluid temperature range ²⁾	-40..+125 °C / -25..+125 °C				
EMC	2014/30/EU EN 61000-6-1 / 2 / 3 / 4				
Vibration resistance	DIN EN 60068-2			≤ 25 g (0..500 Hz)	
Shock resistance	DIN EN 60068-2-27			20 g at 6 mm probe length < 20 g at all other probe lengths	
Protection type ³⁾	DIN EN 60529			IP 67	
CE mark	Available				
Other data					
Supply voltage	Via HYDAC measuring units HMG 5X0, HMG 2500, HMG 30X0 or HMG 4000				
Weight (without connection head)	~ 200 g (sensor length 6 mm) ~ 235 g (sensor length 100 mm) ~ 280 g (sensor length 250 mm) ~ 315 g (sensor length 350 mm)				

Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.

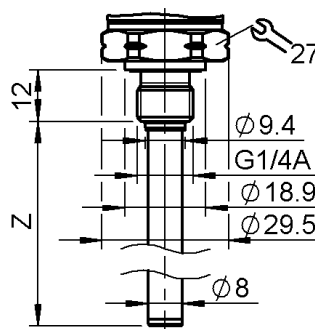
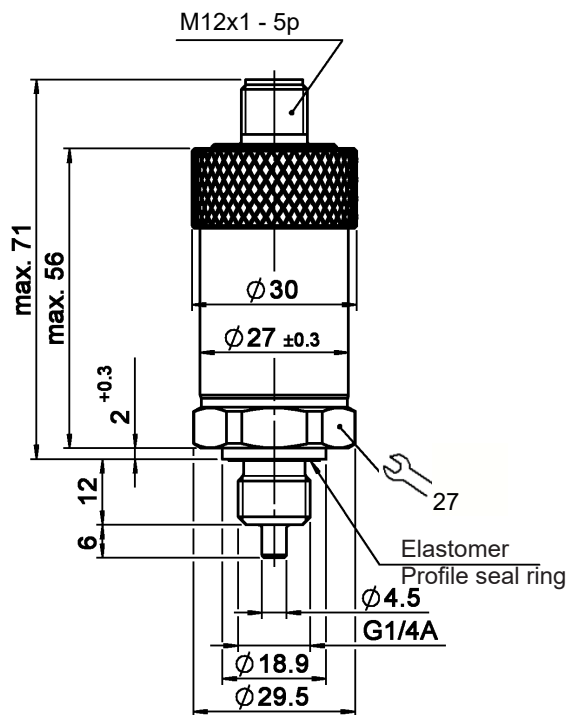
FS (Full Scale) = relative to complete measuring range

¹⁾ Other sealing materials on request

²⁾ In the standard up to -25 °C with FKM seal, -40 °C on request

³⁾ With mounted mating connector in corresponding protection type

Dimensions



Probe length (Z)
100 mm
250 mm
350 mm

Model code

ETS 4 1 4 8 - H - XXX - 000

Mechanical connection

4 = G1/4 A ISO 1179-2

Electrical connection

8 = connector M12x1, 5 pole (without mating connector)

Output signal

H = HSI (automatic sensor detection)

Probe length

006 = 6 mm
100 = 100 mm
250 = 250 mm
350 = 350 mm

Modification number

000 = Standard

Accessories:

Appropriate accessories, such as mating connectors for electrical connection, can be found in the Accessories brochure.

Note

The information in this brochure relates to the operating conditions and applications described.
For applications and/or operating conditions not described please contact the relevant technical department.
Subject to technical modifications.

HYDAC ELECTRONIC GMBH

Hauptstrasse 27
D-66128 Saarbruecken
Phone: +49 (0)6897 509-1
Fax: +49 (0)6897 509-1726
Email: electronic@hydac.com
Website: www.hydac.com



Flow rate transmitter EVS 3100-H / EVS 3110-H

With HSI-sensor detection
For HMG 2500 / 30X0 / 4000

Turbine

High degree of ACC

Features

- Additional connection of temperature and/or pressure sensors possible
- Designed for use with HYDAC measuring devices

Description

The flow rate transmitters of the EVS 3100-H and EVS 3110-H series with HSI sensor detection were specially developed for use in conjunction with the HYDAC measurement devices HMG 5x0, HMG 2500, HMG 30X0 and HMG 4000.

For data transmission purposes, the EVS 31x0-H devices are equipped with an HSI interface (HYDAC Sensor Interface).

Thanks to this, the HSI sensors are recognised completely automatically by the HYDAC measurement devices listed above and all necessary basic device settings are then immediately undertaken automatically.

As is the case with all flow rate measurement transmitters of the EVS 3100 and EVS 3110 series, the EVS 31x0-H also operates in accordance with the turbine principle. The speed of a impeller rotating in the medium current is recorded and converted into an electronic signal.

Application fields

Applications can be found e.g. in:

- Central lubrication
- Oil circulation lubrication
- Transformers
- Cooling systems and circuits
- Lubrication circuits
- Hydraulic systems
- Pumps
- Welding machines and laser systems
- Chemical industry
- Research and development

Measuring tasks in the service, maintenance, troubleshooting or test bench fields can be carried out, processed, displayed and evaluated especially in conjunction with the HYDAC measuring devices.

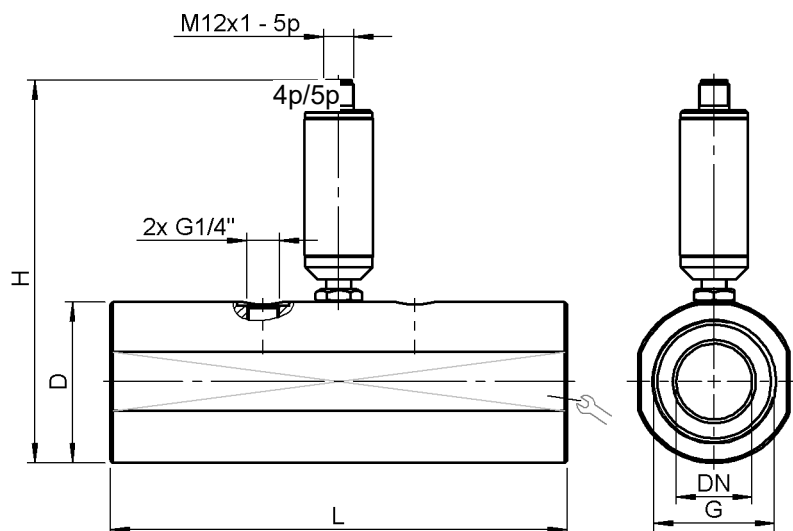
Technical data

Input data			
Measuring ranges ¹⁾ and operating pressure	EVS 3108-H-0020 EVS 3118-H-0020	1.2..20.0 l/min	400 bar
	EVS 3108-H-0060 EVS 3118-H-0060	6.0..60.0 l/min	400 bar
	EVS 3108-H-0300 EVS 3118-H-0300	15.0..300.0 l/min	400 bar
	EVS 3108-H-0600 EVS 3118-H-0600	40.0..600.0 l/min	315 bar 400 bar
Pressure loss	~ 0.3 bar		
Mechanical connection	See device dimensions		
Tightening torque, recommended	See device dimensions		
Additional connection options	2 x G1/4 internal thread for pressure and/or temperature sensors		
Housing material	EVS 3100-H: aluminium EVS 3110-H: Stainless steel		
Output data			
Output signal	HSI (HYDAC S ensor Interface) Automatic sensor detection		
Accuracy	≤ 2 % of the instantaneous value		
Environmental conditions / Approvals / Tests			
Compensated temperature range	-20..+70 °C		
Operating temperature range	-20..+70 °C		
Storage temperature range	-40..+100 °C		
Fluid temperature range	-20..+90 °C		
EMC	2014/30/EC EN 61000-6-1 / 2 / 3 / 4		
Protection type ²⁾	DIN EN 60529	IP 67	
CE mark	Available		
Other data			
Measuring fluid ¹⁾	EVS 3100-H: Hydraulic oils EVS 3110-H: Water-based fluids		
Viscosity range	1..100 cSt		
Calibration viscosity	EVS 3100-H: 30 cSt EVS 3110-H: 5 cSt		
Supply voltage	Via HYDAC measuring units HMG 5X0, HMG 2500, HMG 30X0 or HMG 4000		

Note: ¹⁾ Others on request

²⁾ With mounted mating connector in corresponding protection type

Dimensions



Model EVS	Measuring range [l/min]	L [mm]	H [mm]	D / SW [mm]	G	Tightening torque, recommended [Nm]	DN [mm]
3108-H-0020	1.2..20	117	135	47 / 46	G $\frac{1}{4}$ "	60	7
3108-H -0060	6..60	144	135	48.5 / 46	G $\frac{1}{2}$ "	130	11
3108-H -0300	15..300	155	150	63.5 / 60	G $1\frac{1}{4}$ "	500	22
3108-H -0600	40..600	181	150	63.5 / 60	G $1\frac{1}{2}$ "	600	30
3118-H-0020	1.2..20	117	135	47 / 46	G $\frac{1}{4}$ "	60	7
3118-H -0060	6..60	144	135	48.5 / 46	G $\frac{1}{2}$ "	130	11
3118-H -0300	15..300	155	150	63.5 / 60	G $1\frac{1}{4}$ "	500	22
3118-H -0600	40..600	181	150	63.5 / 60	G $1\frac{1}{2}$ "	600	30

Model code

EVS 3 1 X 8 - H - XXXX - 000

Housing material

0 = aluminium
1 = stainless steel

Electrical connection

8 = connector M12x1, 5 pole (without mating connector)

Output signal

H = HSI (automatic sensor detection)

Measuring ranges l/min

0020 = 1.2..20
0060 = 6..60
0300 = 15..300
0600 = 40..600

Modification number

000 = Standard

Accessories:

Appropriate accessories, such as mating connectors for electrical connection, can be found in the Accessories brochure.

Note

The information in this brochure relates to the operating conditions and applications described.
For applications and/or operating conditions not described please contact the relevant technical department.
Subject to technical modifications.

HYDAC ELECTRONIC GMBH

Hauptstrasse 27
D-66128 Saarbruecken
Phone: +49 (0)6897 509-1
Fax: +49 (0)6897 509-1726
Email: electronic@hydac.com
Website: www.hydac.com



Pressure transmitter

HDA 4700-HC

With HCSI-sensor detection

For HMG 4000

Relative pressure

Accuracy 0.25%

Features

- Accuracy $\leq \pm 0.25\%$ FS typ.
- Excellent EMC characteristics
- Specifically designed for use with HMG 4000

Description

In order to expand the number of sensors on the HMG 4000, the special, CAN-based HCSI sensors were developed.

These HCSI sensors, easily recognisable on the red type label, are automatically detected by the HMG 4000, including all features.

Up to 28 HCSI sensors can be connected to the HMG 4000 simultaneously via the optional Y-distributors to set up an HMG internal bus system. The data is transferred over a CAN-based bus protocol.

Like all pressure transmitter of the HDA 4700 series, the HDA 4700-HC also has the very accurate and robust sensor cell with thin film DMS on a stainless steel membrane.

Application fields

Thanks to exceptional temperature and EMC characteristics as well as its small and compact design, this device series can be used in a wide field of applications in the mobile or industrial sector.

Measuring tasks in the service, maintenance, troubleshooting or test bench fields can be carried out, processed, displayed and evaluated especially in conjunction with the HYDAC portable data recorder HMG 4000.

Technical data

Input data													
Measuring ranges	bar	-1..9	16	25	60	100	160	250	400	600	1000	1600	2000
Overload pressures	bar	20	32	50	120	200	320	500	800	1000	1600	2400	3000
Burst pressure	bar	100	100	125	300	500	800	1250	2000	2000	3000	3000	4000
Mechanical connection					G1/4 A ISO 1179-2 G1/2 B DIN-EN 837								
Tightening torque, recommended					20 Nm (G1/4); 45 Nm (G1/2)								
Parts in contact with fluid					Mech. connection: Stainless steel Seal: FKM								
Output data													
Output signal					HCSI (HYDAC Sensor Interface) Automatic sensor detection								
Accuracy acc. to DIN 16086, Terminal based ¹⁾					≤ ± 0.25 % FS typ. ≤ ± 0.5 % FS max.								
Accuracy at minimum value setting (B.F.S.L.)					≤ ± 0.15 % FS typ. ≤ ± 0.25 % FS max.								
Temperature compensation zero point					≤ ± 0.008 % FS / °C typ. ≤ ± 0.015 % FS / °C max.								
Temperature compensation span					≤ ± 0.008 % FS / °C typ. ≤ ± 0.015 % FS / °C max.								
Rise time					≤ 1 ms								
Long-term drift					≤ ± 0.1 % FS typ. / year								
Environmental conditions / Approvals / Tests													
Compensated temperature range					-25..+85 °C								
Operating temperature range ²⁾					-40..+85 °C / -25..+85 °C								
Storage temperature range					-40..+100 °C								
Fluid temperature range ²⁾					-40..+100 °C / -25..+100 °C								
EMC					2014/30/EU EN 61000-6-1 / 2 / 3 / 4								
Vibration resistance					DIN EN 60068-2-6					≤ 200 m/s² (10..500 Hz)			
Shock resistance					DIN EN 60068-2-27					≤ 100 g / 6 ms			
Protection type ³⁾					DIN EN 60529					IP 67			
 /  conformity					Available								
 approval ⁴⁾					Available								
Other data													
Supply voltage					Via HYDAC data recorder HMG 4000								
Life expectancy ⁵⁾					> 10 million load cycles (0..100 % FS)								
Weight					~ 150 g								

Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.

FS (Full Scale) = relative to complete measuring range

B.F.S.L. = Best Fit Straight Line

¹⁾ Including non-linearity, hysteresis, offset and final value deviation

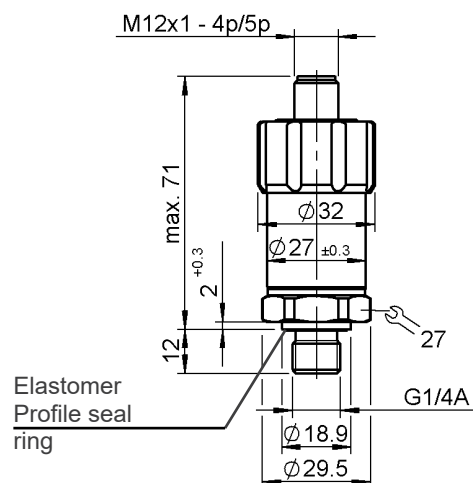
²⁾ In the standard up to -25 °C with FKM seal, -40 °C on request

³⁾ With mounted mating connector in corresponding protection type

⁴⁾ Environmental conditions acc. to 1.4.2 UL 61010-1; C22.2 no. 61010-1

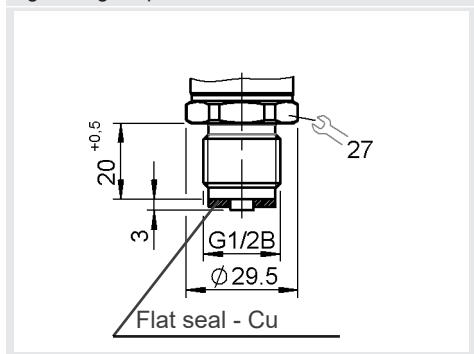
⁵⁾ Measuring ranges ≥ 1000 bar: > 1 million load cycles (0..100 % FS)

Dimensions



Mechanical connection variants

G1/2 B DIN EN 837 external thread
Tightening torque, recommended: 45 Nm



Model code

HDA 4 7 X 8 - HC - XXX - 000

Mechanical connection

1 = G1/2 B DIN EN 837 (only for pressure ranges "1600 and 2000 bar")
4 = G1/4 A ISO 1179-2

Electrical connection

8 = Plug connector M12x1, 5 pole (without mating connector)

Output signal

HC = HCSI (HYDAC CAN Sensor Interface)

Measuring ranges in bar

0009 (-1 .. 9); 0016; 0025; 0060; 0100; 0160; 0250; 0400; 0600; 1000
1600; 2000 bar (only with mech. connection type "1")

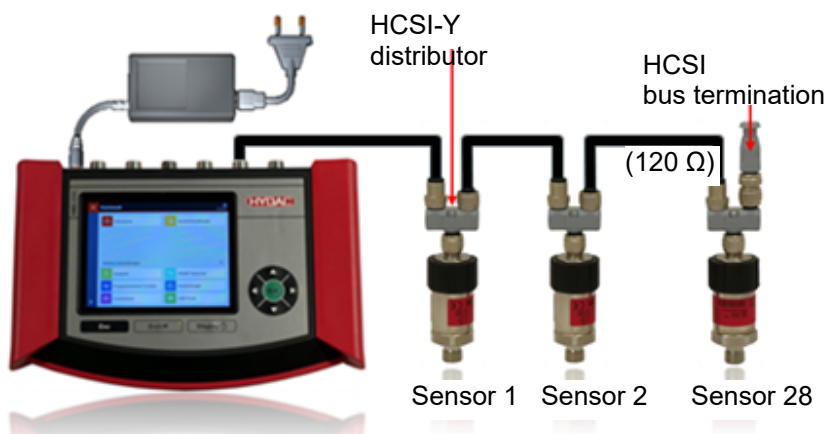
Modification number

000 = Standard

Accessories

HCSI Y distributor part no.: 6178196

HCSI buss termination (120 Ω) part no.: 6178198



Note

The information in this brochure relates to the operating conditions and applications described.
For applications and/or operating conditions not described please contact the relevant technical department.
Subject to technical modifications.

HYDAC ELECTRONIC GMBH

Hauptstrasse 27
D-66128 Saarbruecken
Phone: +49 (0)6897 509-1
Fax: +49 (0)6897 509-1726
Email: electronic@hydac.com
Website: www.hydac.com



Temperature transmitter ETS 4100-HC

With HCSI-sensor detection
For HMG 4000

Temperature probe

Accuracy 0.4 %

Features

- Robust design
- Integrated temperature sensor
- Excellent EMC characteristics
- Specifically designed for use with HMG 4000

Description

In order to expand the number of sensors on the HMG 4000, the special, CAN-based HCSI sensors were developed.

These HCSI sensors, easily recognisable on the red type label, are automatically detected by the HMG 4000, including all features.

Up to 28 HCSI sensors can be connected to the HMG 4000 simultaneously via the optional Y-distributors to set up an HMG internal bus system. The data is transferred over a CAN-based bus protocol.

As is the case with all temperature transmitters of the ETS 4000 series, the ETS 4100-HC is characterised for its robust design and its excellent EMC properties. Temperatures within a range of -25 °C to +100 °C can be measured by means of this temperature sensor.

Application fields

Thanks to its small and compact design, this device series can be used in a wide range of applications in the mobile or industrial sector.

Measuring tasks in the service, maintenance, troubleshooting or test bench fields can be carried out, processed, displayed and evaluated especially in conjunction with the HYDAC portable data recorder HMG 4000.

Technical data

Input data					
Measuring range	-25..+100 °C				
Probe length	mm	6	100	250	350
Probe diameter	mm	4.5	8	8	8
Pressure resistance	bar	600	125	125	125
Mechanical connection	G1/4 A ISO 1179-2 / external				
Tightening torque, recommended	20 Nm				
Parts in contact with fluid ¹⁾	Mech. connection: Stainless steel Seal: FKM				
Output data					
Output signal	HCSI (HYDAC CAN Sensor Interface) Automatic sensor detection				
Accuracy (at room temperature)	≤ ± 0.4 % FS typ. ≤ ± 0.8 % FS max.				
Temperature drift (environment)	≤ ± 0.01 % FS / °C				
Rise time acc. to DIN EN 60751	t ₅₀ : ~ 4 s t ₉₀ : ~ 8 s				
Environmental conditions / Approvals / Tests					
Operating temperature range ²⁾	-40..+85 °C / -25..+85 °C				
Storage temperature range	-40..+100 °C				
Fluid temperature range ²⁾	-40..+125 °C / -25..+125 °C				
EMC	2014/30/EU EN 61000-6-1 / 2 / 3 / 4				
Vibration resistance	DIN EN 60068-2			≤ 25 g (0..500 Hz)	
Shock resistance	DIN EN 60068-2-27			20 g at 6 mm probe length < 20 g at all other probe lengths	
Protection type ³⁾	DIN EN 60529			IP 67	
CE mark	Available				
Other data					
Supply voltage	Via HYDAC data recorder HMG 4000				
Weight (without connection head)	~ 200 g (sensor length 6 mm) ~ 235 g (sensor length 100 mm) ~ 280 g (sensor length 250 mm) ~ 315 g (sensor length 350 mm)				

Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.

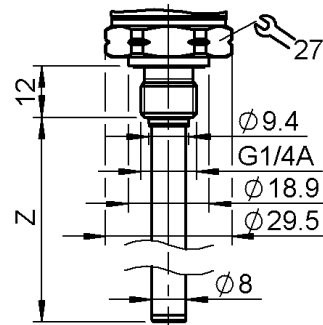
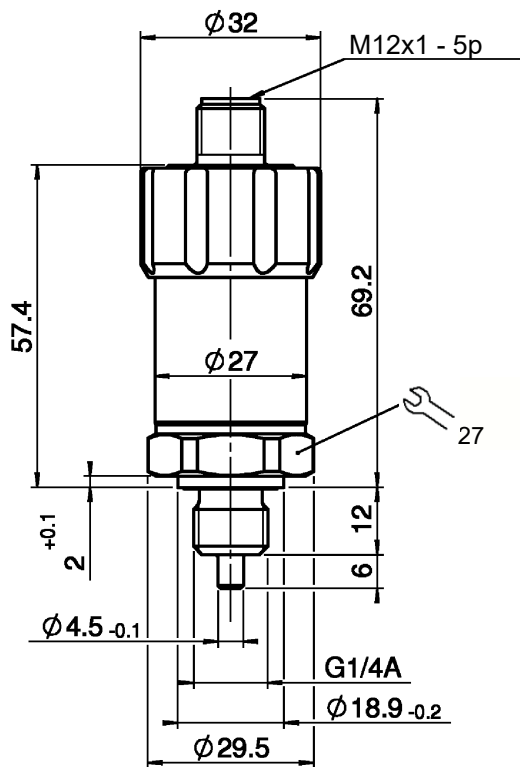
FS (Full Scale) = relative to complete measuring range

¹⁾ Other sealing materials on request

²⁾ In the standard up to -25 °C with FKM seal, -40 °C on request

³⁾ With mounted mating connector in corresponding protection type

Dimensions



Probe length (Z)
100 mm
250 mm
350 mm

Model code

ETS 4 1 4 8 - HC - XXX - 000

Mechanical connection

4 = G1/4 A ISO 1179-2

Electrical connection

8 = connector M12x1, 5 pole (without mating connector)

Output signal

HC = HCSI (HYDAC CAN Sensor Interface)

Probe length

006 = 6 mm
100 = 100 mm
250 = 250 mm
350 = 350 mm

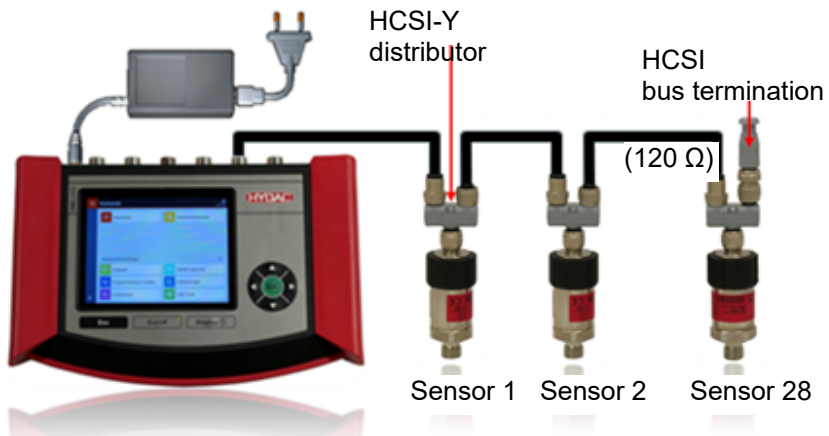
Modification number

000 = Standard

Accessories

HCSI Y distributor part no.: 6178196

HCSI bus termination (120 Ω) part no.: 6178198



Note

The information in this brochure relates to the operating conditions and applications described.
For applications and/or operating conditions not described please contact the relevant technical department.
Subject to technical modifications.

HYDAC ELECTRONIC GMBH
Hauptstrasse 27
D-66128 Saarbruecken
Phone: +49 (0)6897 509-1
Fax: +49 (0)6897 509-1726
Email: electronic@hydac.com
Website: www.hydac.com



RPM probe

HDS 1000

For HMG 2500 / 30X0 / 4000

Features

- High range
- Short response times
- Insensitive to external light sources
- Robust design
- Maintenance-free
- Connection option to HYDAC portable data recorders HMG 2500 / 30X0 / 4000

Description

The HDS 1000 RPM probe is a sensor for non-contact speed detection of rotating bodies. A reflector is required for operation, which is included in the scope of delivery.

The plastic housing of the HDS 1000 is fully welded and glass fibre reinforced. Thanks to this robust design, the RPM probe is ideally suited for industrial use.

The devices are maintenance-free and are characterised by high ranges.

Application fields

The HDS 1000 can be connected directly to the HYDAC portable data recorders HMG 2500, 30X0, or 4000.

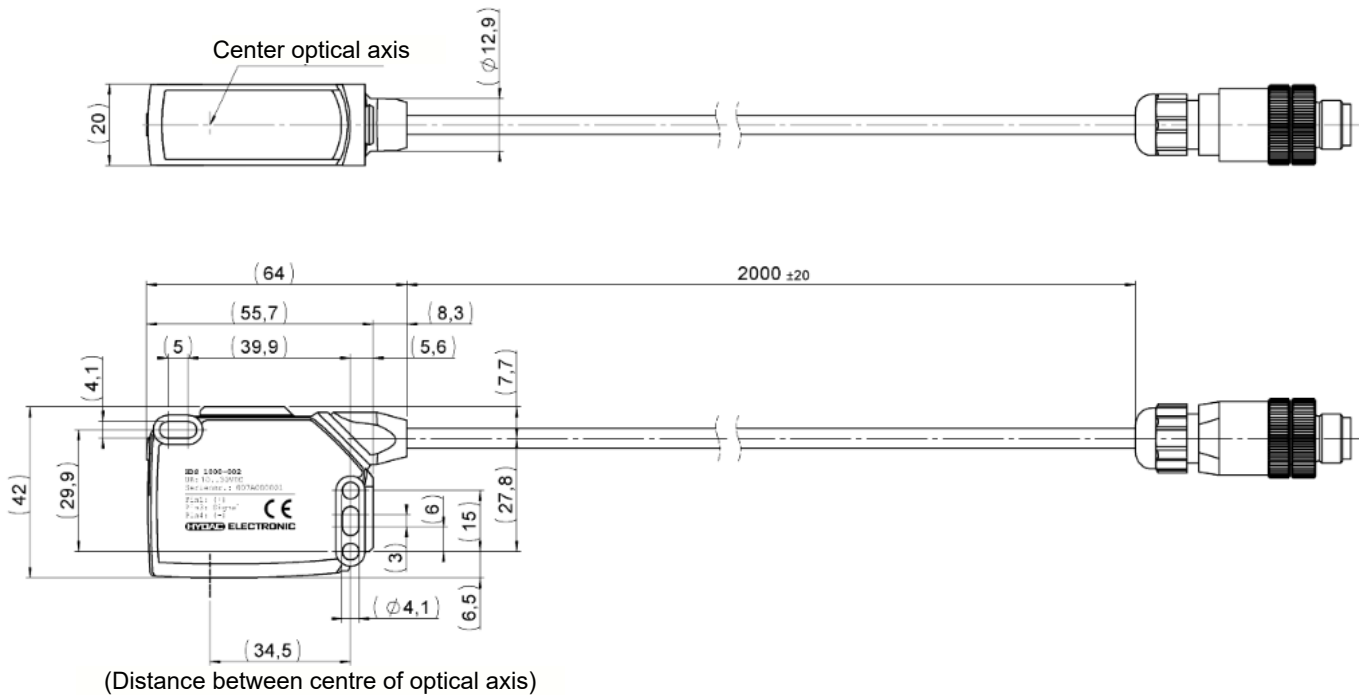
Integration into monitoring systems (e.g. with PLC) is also possible.

Technical data

Input data	
Typical maximum range RW	0..7 m
Light spot diameter / distance	40 mm / 2 m
Output data	
Switching output (antivalent)	PNP
Output current I _{max.}	100 mA
Frequency signal max.	1000 Hz
Reaction time	0.5 ms
Environmental conditions / Approvals / Tests	
Operating temperature range	-40..+60 °C
Storage temperature range	-40..+75 °C
Protection type (IEC)	IP67
VDE protection type	Protection type II (protective insulation)
Other data	
Supply voltage	10..30 V DC ¹⁾
Electrical connection	Cable outlet with 2 m cable and device plug M12x1, 4 pole
Weight	~ 100 g

Note: reverse polarity protection of the supply voltage, short-circuit resistance of the outputs, interference pulse suppression present.
¹⁾ Limit values max. 5 V_{SS}, operation in short-circuit protected network max. 8 A.

Dimensions



Pin connections

M12x1, 4 pole	Pin	Output signal
	1	+U _B
	2	n.c.
	3	Signal
	4	0 V

Order details

HDS 1000-002 speed probe including reflective film set **Part no.: 909436**

Accessories

Reflective film set 25 pieces (replacement) for HDS 1000-002, **Part no.: 904812**

Note

The information in this brochure relates to the operating conditions and applications described.

For applications and/or operating conditions not described please contact the relevant technical department.

Subject to technical modifications.

HYDAC ELECTRONIC GMBH

Hauptstrasse 27

D-66128 Saarbruecken

Phone: +49 (0)6897 509-1

Fax: +49 (0)6897 509-1726

Email: electronic@hydac.com

Website: www.hydac.com



Other accessories for HYDAC handheld meas. units

Features

Comprehensive electrical and mechanical accessories portfolio:

- Adapter
- Connection cable
- Power supply unit
- Sensor simulator
- Carrying case
- Carrying strap
- Protective film
- and much more

Description

For our handheld measuring units and data recorders, a wide range of matching accessories is available for use in the laboratory as well as commissioning, service and maintenance for a wide variety of measuring tasks.

In addition to connection adapters, connection cables and power supplies, our portfolio also includes items for convenient transport and much more.

Application fields

The wide range of accessories is tailored to the respective application of hand-held measuring units for measuring tasks on hydraulic and pneumatic systems and machines, both in the industrial and mobile sector.

Overview of accessories

Plastic case	
	Suitable for HMG 500 / 510 and accessories Part no.: 6043006
Pelicase	
	Heavy duty version for HMG 2500 / 4000 and accessories Part no.: 6216490
Trolley case	
	Trolley version for HMG 2500 / 4000 and accessories Part no.: 6217811
Magnetic bracket	
	For HMG 4000 handle can be rotated by 360°, at the rear three magnets with approx. 80 N holding force Part no.: 4227226
Screen protector	
	For HMG 4000 Part no.: 4470677
Power supply unit	
	For HMG 500 / 510 Part no.: 6043562
Power supply unit	
	For HMG 2500 / 30X0 / 4000 Part no.: 6054296
ZBE 31	
	CAR charging cable for HMG 2500 / 30X0 / 4000 Part no.: 909739

UVM 3000



Universal connection adapter for HMG 30X0 / 4000
for connecting external sensors

Part no.: 909752

HCSI-Y distributor



Y-adapter for HMG 4000
for connection of HCSI sensors

Part no.: 6178196

HCSI bus termination



Terminating resistor for HCSI bus cable (120 Ω)

Part no.: 6178198

ZBE 46



Pin adapter for
HMG 30X0 / 4000 for 3-wire signals and AquaSensor AS 1000

Part no.: 925725

ZBE 100



Connection adapter for HMG 4000
for TFP 100 temperature sensor

Part no.: 925726

ZBE 38



Y-adapter (black) for HMG 30X0 / 4000

Part no.: 3224436

ZBE 30



ZBE 30-02 (5 pole)
connection cable, 2 m length, plug/socket M12x1, screw connection

Part no.: 6040851

ZBE 30-05 (5pole)
connection cable, 5 m length, plug/socket M12x1, screw connection

Part no.: 6040852

ZBE 30-10 (5pole)
connection cable, 10 m length, plug/socket M12x1, screw connection

Part no.: 3267854

ZBE 40**ZBE 40-02 (5pole)**

connection cable, 2 m length, plug/socket M12x1,

Push-Pull connector on the plug side, screw connector on the socket side

Part no.: 6177158

ZBE 40-05 (5pole)

connection cable, 5 m length, plug/socket M12x1,

Push-Pull connector on the plug side, screw connector on the socket side

Part no.: 6177159

ZBE 40-10 (5pole)

connection cable, 10 m length, plug/socket M12x1,

Push-Pull connector on the plug side, screw connector on the socket side

Part no.: 6177160

ZBE 34

Connection adapter for HMG 30X0 / 4000

for connecting sensors with M12x1, 5pole to Binder connector

Part no.: 3236597

ZBE 35

Connection adapter for HMG 30X0 / 4000

for connecting sensors with M12x1, 5pole to Hirschmann connector

Part no.: 3236601

HDS 1000-002 speed sensor

With M12x1 plug

for connection to HMG 2500 / 30X0 / 4000

including reflection film set

Part no.: 909436

HDS 1000 reflection film set spare part, 25 pieces

Part no.: 904812

SSH 1000-H-3

Sensor simulator for HMG 2500 / 30X0 / 4000 for simulating 2 HSI sensors, ideal for training purposes

Part no.: 909414

USB cable

For PC connection to HMG 2500 / 30X0 / 4000 (1x plug A - 1x plug B)

Part no.: 6040585

ZBE 3010

CAN adapter for HMG 3010

Part no.: 921238

ZBE I2-000

Current measuring adapter for HMG 2500 / 4000, ± 5 A AC / DC

Part no.: 927183

ZBE I1-MECAB-000

Test lead set for current clamp adapter ZBE-I2-000

Part no.: 926993

ZBE I1-MESAP-000

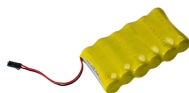
Solenoid valve measuring adapter for current clamp adapter ZBE-I2-000

Part no.: 926992

Carrying strap

For HMG 4000

Part no.: 4070365

Battery pack

For HMG 2500 / 30X0

Part no.: 3218276

Battery pack

For HMG 4000

Part no.: 3956715

Hydraulic Adapter Kit

For HMG 2500 / 4000, each 2 pieces

- Transition hose DN 2-1620/1620 (400 mm and 1000 mm)
- pressure gauge connection 1620/G1/4
- measuring pot coupling 1620/1620

Part no.: 903083

Note

The information in this brochure relates to the operating conditions and applications described.
For applications and/or operating conditions not described please contact the relevant technical department.
Subject to technical modifications.

HYDAC ELECTRONIC GMBH

Hauptstrasse 27
D-66128 Saarbruecken
Phone: +49 (0)6897 509-1
Fax: +49 (0)6897 509-1726
Email: electronic@hydac.com
Website: www.hydac.com