

# Relative and absolute pressure transmitter type 558 for mobile application

Pressure range  
0 ... 6 – 60 bar



The pressure transmitter type 558 meets the highest requirements for the industry and vehicle manufacturing. This sensor is available with protection standard IP67 or IP69K. The optional pressure orifice prevents damage due to pressure peaks.

The compact and rugged design meets the requirement of shock- and vibration stability according Kfz-norm ISO 16750. The pressure transmitter type 558 guarantees highest EMC stability according to various Kfz regulations with test level up to 100V.

This sensor utilises a ceramic technology, developed by Huba Control and for the last 20 years, in millions of applications.

- Compact and rugged construction for high operating reliability
- Wide choice of connections available
- Excellent EMC capacity
- Negligible temperature influence on accuracy

## Technical Overview

### Pressure range

Relative	0 ... 10 – 60 bar
Absolute	0 ... 6 bar

### Operating conditions

Medium		Liquids and gases
Temperature	Medium	FPM EPDM NBR
	Ambient	-40 ... +125 °C
	Storage	-20 ... +125 °C
		-40 ... +100 °C
		-50 ... +100 °C
Tolerable overload / Rupture pressure		2.5 x FS

### Materials

Pressure connection	Stainless steel 1.4404 / AISI 316L
Plug accommodation	Polyarylamide 50% GF UL 94 V-0
Materials in contact with the medium	Pressure connection
	Sensor
	Sealing material
	Stainless steel 1.4404 / AISI 316L
	Ceramic Al <sub>2</sub> O <sub>3</sub> (96%)
	EPDM, NBR, FPM

### Electrical overview

	Output	Power supply	Load	Current consumption
2 wire	4 ... 20 mA	7.5 ... 33 VDC	$< \frac{\text{supply voltage} - 7.5 \text{ V}}{0.02 \text{ A}}$ [Ohm]	< 23 mA
	0 ... 5 V	7 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA
3 wire	0 ... 10 V	12 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA
	ratiom. 10 ... 90%	5 VDC ± 10%	>10 kOhm / < 100 nF	< 7 mA
Polarity reversal protection	Short circuit proof and protected against polarity reversal. Each connection is protected against crossover up to max. supply voltage.			
Insulation voltage				500 VDC

### Protection class

Protection class III

### Dynamic response

Response time	< 2 ms (10 ... 90%, typ. 1 ms)
Load cycle	< 100 Hz

### Electrical connection <sup>1)</sup>

	Protection standard
Kostal SLK 2.8 Codierung A	IP 69K
AMP-JPT	IP 67
AMP Superseal 1.5	IP 67
Deutsch DT04-3P	IP 69K
Metri Pack 150 P2S Series	IP 67
M12x1	IP 69K

### Pressure connection

Outside thread	$\frac{7}{16}$ - 20 UNF
	$\frac{1}{4}$ - 18 NPT
	G $\frac{1}{4}$ sealed at back DIN 3852-E with profile seal FPM (-30 ... +135 °C)
	G $\frac{3}{8}$ sealed at back DIN 3852-E with profile seal FPM (-30 ... +135 °C)
	M14x1.5 sealed at back DIN 3852-E with profile seal FPM (-30 ... +135 °C)
	R $\frac{1}{4}$ acc. EN 10226

### Installation arrangement

Unrestricted

### Tests / Admissions

	Noise immunity / Noise emission	Noise immunity automotive guideline
Electromagnetic compatibility	ISO 13766 - earth-moving equipment	ISO 11452-2, HF (Field), 100 V/m (200 ... 2000 MHz)
	DIN EN 13309 - construction equipment	ISO 11452-4, HF (BCI), 100 mA (20 ... 400 MHz)
	DIN ISO 14982 - agriculture and forestry	ISO 10605, ESD, ±15 kV contact, ±15 kV air
	Automotive guideline ECE R10 <sup>2)</sup>	ISO 7637-2 <sup>3)</sup> , puls 1, 2a, 2b, 3a, 3b (test level 4)
	Automotive guideline 2004/104/EG <sup>2)</sup>	ISO 16750-2, Load Dump, 155 V (1 Ω, 300 ms)
	EN 61326-2-3 - pressure transducer <sup>4)</sup>	
Shock acc. ISO 16750-3	50 g, 11 ms, half sine wave, 1000x / axis	
Vibration acc. ISO 16750-3	Test VI (12 g, sinusoidal 18 g random vibration)	
UL	ANSI/UL 61010-1 acc. E325110	

### Weight

~ 90 g

### Packaging (Please state on order)

Single packaging in cardboard	accessories integrated
Multiple packaging in cardboard (25 pcs)	

## Accuracy

Parameter	Unit	
Characteristic line acc. IEC 61298-2 <sup>5),6)</sup>	% fs	± 0.5
Resolution	% fs	0.1
Thermal characteristic <sup>7)</sup>	max. % fs/10K	± 0.2
Long term stability acc. IEC 61298-2	max. % fs	± 0.5

Test conditions: 25 °C, 45% rF

<sup>1)</sup> Warranty of IP protection only with suitable classified plug (consider manufacturers' instructions)

<sup>3)</sup> Pressure sensor for 12 V and 24 V power system (0 ... 5 V, 0 ... 10 V and 4 ... 20 mA)

<sup>5)</sup> incl. zero point, full scale, linearity, hysteresis and repeatability

<sup>2)</sup> E1 approval for customer specific type on request

<sup>4)</sup> types M12x1 only

<sup>6)</sup> Considering EMC interference < ±1.5% fs

<sup>7)</sup> -40 ... +100 °C

Order code selection table in bar			1	2	3	4	5	6	7	8	9	10	11
			558.	X	X	X	X	X	X	X	X	X	X
Pressure mode	Relative		9										
	Absolute		8										
Pressure range <sup>1)</sup>	0 ... 6 bar		8	1	7								
	0 ... 16 bar		9	3	1								
	0 ... 25 bar		9	3	2								
	0 ... 40 bar		9	3	3								
	0 ... 60 bar		9	4	0								
	Sealing material	EPDM	Ethylene propylene					1	0				
NBR		Butadiene Acrylonitrile					2	0					
FPM		Fluoro elastomer					5	0					
Output / Power supply	0 ... 5 V								1				
	0 ... 10 V								2				
	4 ... 20 mA									3			
	10 ... 90% ratiom. 5VDC ±10%									7			
Electrical connection <sup>2)</sup>	Kostal SLK 2.8 coding A								7	1			
	AMP-JPT									2			
	AMP Superseal 1.5									3			
	Deutsch DT04-3P									4			
	Metri Pack 150 P2S Series <sup>3)</sup>									5			
	M12x1		2w: IN=1 / OUT=3								S		
Pressure connection <sup>1)</sup>	Outside thread	7/16 -20 UNF										2	
		1/4 -18 NPT										3	
		G 1/4 sealed at back DIN 3852-E with profile seal FPM										4	
		G 1/8 sealed at back DIN 3852-E with profile seal FPM										H	
		M14x1.5 sealed at back DIN 3852-E with profile seal FPM										6	
		R 1/4 acc. EN 10226										7	
Pressure orifice	without										0	1	
	with										2	1	
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 50bar/Out1...8V)												W

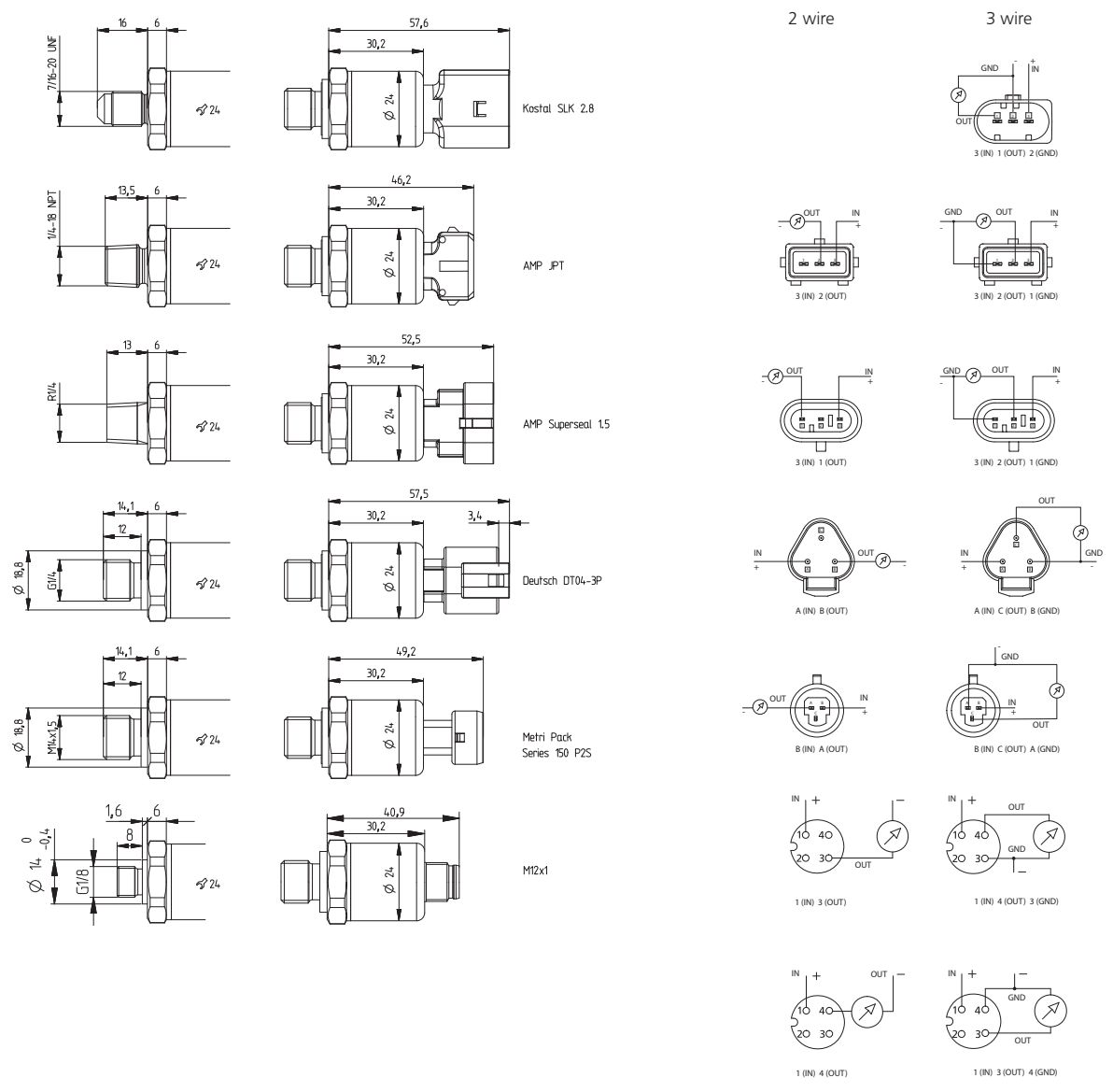
Order code selection table in psi			1	2	3	4	5	6	7	8	9	10	11
			558.	X	X	X	X	X	X	X	X	X	X
Pressure mode	Relative		9										
	Absolute		8										
Pressure range <sup>1)</sup>	0 ... 100 psi		8	B	7								
	0 ... 200 psi		9	C	1								
	0 ... 300 psi		9	C	2								
	0 ... 500 psi		9	C	3								
	0 ... 750 psi		9	D	0								
	Sealing material	EPDM	Ethylene propylene					1	0				
NBR		Butadiene Acrylonitrile					2	0					
FPM		Fluoro elastomer					5	0					
Output / Power supply	0 ... 5 V								1				
	0 ... 10 V								2				
	4 ... 20 mA									3			
	10 ... 90% ratiom. 5VDC ±10%									7			
Electrical connection <sup>2)</sup>	Kostal SLK 2.8 coding A								7	1			
	AMP-JPT									2			
	AMP Superseal 1.5									3			
	Deutsch DT04-3P									4			
	Metri Pack 150 P2S Series <sup>3)</sup>									5			
	M12x1		2w: IN=1 / OUT=3								S		
Pressure connection <sup>1)</sup>	Outside thread	7/16 -20 UNF										2	
		1/4 -18 NPT										3	
		G 1/4 sealed at back DIN 3852-E with profile seal FPM										4	
		G 1/8 sealed at back DIN 3852-E with profile seal FPM										H	
		M14x1.5 sealed at back DIN 3852-E with profile seal FPM										6	
		R 1/4 acc. EN 10226										7	
Pressure orifice	without										0	1	
	with										2	1	
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 650psi/Out1...8V)												W

Accessories		Accessories supplied loose
Set - Female connector AMP JPT	2 wire (3 wire with 1 blanking plug)	Order Number 110442
Set - Female connector AMP JPT	3 wire	108767
Set - Female connector AMP Superseal 1.5 (0.5 - 1.0 mm <sup>2</sup> )	3 wire (Blanking Plug to enable 2 wire)	120254
Set - Female connector AMP Superseal 1.5 (1.0 - 1.5 mm <sup>2</sup> )	3 wire (Blanking Plug to enable 2 wire)	120255
Calibration certificate		104551

<sup>1)</sup> Other pressure ranges and pressure connections on request <sup>2)</sup> Delivery without female connector <sup>3)</sup> For pressure ranges ≤ 16 bar (200psi, 1.6 MPa / relative) only possible if deaeration through the cable is assured

Order code selection table in MPa		1	2	3	4	5	6	7	8	9	10	11
		558. X X X X X X X X X X X X										
Pressure mode	Relative	9										
	Absolute	8										
Pressure range <sup>1)</sup>	0 ... 0.6 MPa	8	G	7								
	0 ... 1.6 MPa	9	H	1								
	0 ... 2.5 MPa	9	H	2								
	0 ... 4 MPa	9	H	3								
	0 ... 6 MPa	9	K	0								
Sealing material	EPDM Ethylene propylene					1	0					
	NBR Butadiene Acrylonitrile					2	0					
	FPM Fluoro elastomer					5	0					
Output / Power supply	0 ... 5 V									1		
	0 ... 10 V									2		
	4 ... 20 mA									3		
	10 ... 90% ratiom.									7		
Electrical connection <sup>2)</sup>	Kostal SLK 2.8 coding A								7	1		
	AMP-JPT									2		
	AMP Superseal 1.5									3		
	Deutsch DT04-3P									4		
	Metri Pack 150 P2S Series <sup>3)</sup>									5		
	M12x1	2w: IN=1 / OUT=3									5	
Pressure connection <sup>1)</sup>	Outside thread											
	7/16-20 UNF											2
	1/4-18 NPT											3
	G 1/4 sealed at back DIN 3852-E with profile seal FPM											4
	G 1/8 sealed at back DIN 3852-E with profile seal FPM											H
	M14x1.5 sealed at back DIN 3852-E with profile seal FPM											6
Pressure orifice	without										0	1
	with										2	1
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 5MPa/Out1...8V)											W

Dimensions in mm / Electrical connections



<sup>1)</sup> Other pressure ranges and pressure connections on request <sup>2)</sup> Delivery without female connector <sup>3)</sup> For pressure ranges ≤ 16 bar (200psi, 1.6 MPa / relative) only possible if deaeration through the cable is assured

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