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JUMO Instrument Co. Ltd.
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JUMO Process Control, Inc.
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JUMO dTRANS p33 Pressure Transmitter and Level Probe for use in hazardous areas

Type 404753

Ⓔ II 1/2 GD EEx ia IIC T4...T6 // T/Ta; (T4) 95°C; (T5) 85°C; (T6) 70°C // IP65

General application

The type 404753 pressure transmitter measures the pressure in both corrosive and non-corrosive gases, vapors, liquids and dusts. The transmitter operates on the piezoresistive measuring principle. The output signal is a DC current that is proportional to the input pressure.

The type 404753 pressure transmitter fulfills the following requirements for equipment group II – in Zone 1 and 2 areas with an explosion hazard arising from gas (**Gas**).

- The pressure connection (process connection) may, however, also be mounted on to zone 0.
- in Zone 21 and 22 areas with an explosion hazard arising from dust (**Dust**)

The EC type-examination certificate is designated: SNCH 03 ATEX 3545.

The pressure transmitter can also be used as a level probe (extra code /406).



Technical data

Explosion protection

Ⓔ II 1/2 GD EEx ia IIC T4 – T6
T / Ta: (T4) 95°C; (T5) 85°C;
(T6) 70°C
IP65

Reference conditions

to DIN 16 086 and IEC 770/5.3

Measurement ranges

see Order details

Overload limit

for ranges < 100 bar:
4 x full scale
for ranges ≥ 100 bar:
2 x full scale

Bursting pressure

10 x full scale, 2000 bar max.

Parts in contact with medium

standard:
stainless steel, Mat. Ref. 1.4436, 1.4571
for range ≥ 60 bar:
stainless steel, Mat. Ref. 1.4571, 1.4542
with extra code 406
(level probe version):
cable material: PE (polyethylene)

Output

4 – 20 mA 2-wire

Zero offset

≤ 0.3% of full scale

Thermal hysteresis

for ranges ≤ 600 mbar:
≤ ± 1% of full scale
for ranges > 600 mbar:
≤ ± 0.5% of full scale

Ambient temperature error

for ranges 250 and 400 mbar:
zero: ≤ 0.03%/°C typical,
≤ 0.05%/°C max.
span: ≤ 0.02%/°C typical,
≤ 0.04%/°C max.

for ranges above 600 mbar:

zero: ≤ 0.02%/°C typical,
≤ 0.04%/°C max.
span: ≤ 0.02%/°C typical,
≤ 0.04%/°C max.

Deviation from characteristic

≤ 0.5% of full scale
(limit setting)

Hysteresis

≤ 0.1% of full scale

Stability per year

≤ 0.5% of full scale

Supply

11 – 28 V DC
(from intrinsically safe circuit)¹
U_{max} ≤ 28 V
I_{K max} ≤ 120 mA
Ripple:
The voltage spikes must not go above or below the limits specified for the supply.
max. current drawn ≤ 45 mA
(at 24 V DC)

Supply voltage error

≤ 0.03% per V

Permissible ambient temperature

-40 to +85°C

Storage temperature

-40 to +85°C

Permissible temperature of medium

standard: -40 to +85°C
with basic type ext. 004: -40 to +200°C
with extra code 406: -40 to +70°C

Electromagnetic compatibility

EN 61 326
interference emission: Class B
interference immunity:
to industrial requirements

Electrical connection

recommended: screened 5-core cable
with extra code 406
(level probe version):
PE cable with internal pressure
equilibration tubing

Mechanical shock

(to IEC 68-2-27)
100 g/1 msec

Mechanical vibration

(to IEC 68-2-6)
max. 10 g at 15 – 2000 Hz

Mechanical shock

(to IEC 68-2-27)
100 g/1 msec

¹ intrinsically safe circuit in conjunction with supply unit with isolating transformer, Type KFD2, Data Sheet 40.4757.

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Mechanical vibration

(to IEC 68-2-6)
 max. 10 g at 15 — 2000 Hz

Enclosure protection

with connector screwed on
 IP65 to EN 60 529

Housing

stainless steel, Mat. Ref. 1.4301

Pressure connection

see Order details;
 other connections on request

Nominal position

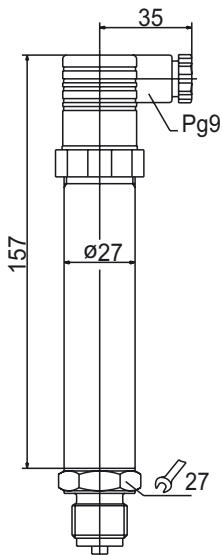
unrestricted

Weight

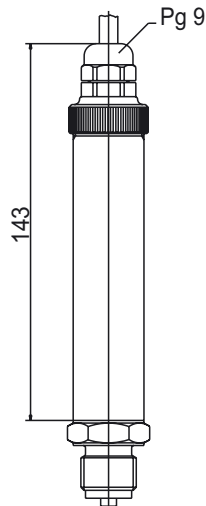
350 gm (with G 1/2 pressure connection)

Dimensions

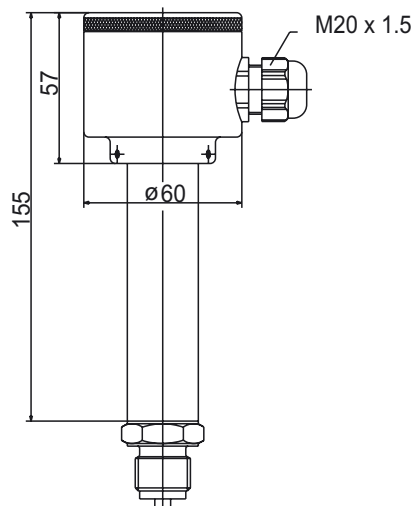
Electrical connection 61



Electrical connection 12

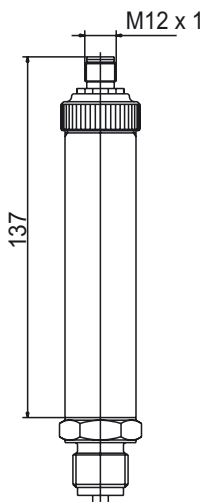


Electrical connection 75

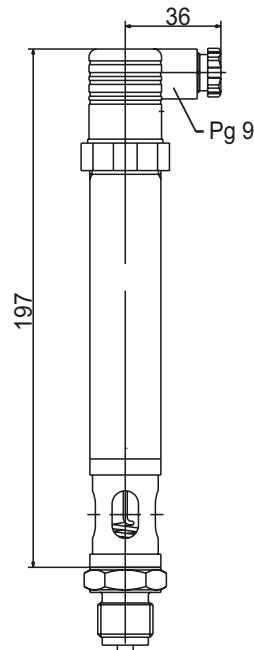
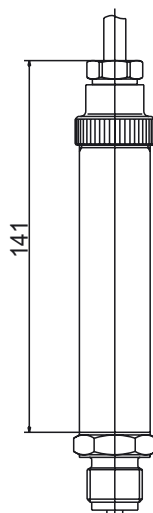


Basic type extension 004

Electrical connection 36



Extra code 406






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Electrical connection

Connection	Terminals		
	Terminal box	Attached cable	Connector M12 x 1
Supply 11 – 28 V DC intrinsically safe 	1 L+ 2 L-	white gray	1 L+ 3 L-
Output 4 – 20 mA 2-wire proportional current 4 to 20 mA in supply 	1 + 2 -	white gray	1 + 3 -
Potential equilibration 			2
Screen		black	

Pin assignment (M12 x 1), 5-pole



Order details

- (1) **Basic type**
 404753 Pressure transmitter JUMO dTRANS p33
 for use in hazardous areas
- (2) **Basic type extension**
 000 none
 004 elevated temperature of medium¹
- (3) **Nominal input range**
 475 -0.25 – 0 bar gauge pressure
 476 -0.4 – 0 bar gauge pressure
 477 -0.6 – 0 bar gauge pressure
 478 -1 – 0 bar gauge pressure
 479 -1 – 0.6 bar gauge pressure
 480 -1 – 1.5 bar gauge pressure
 481 -1 – 3 bar gauge pressure
 482 -1 – 5 bar gauge pressure
 483 -1 – 9 bar gauge pressure
 451 0 – 0.25 bar gauge pressure
 452 0 – 0.4 bar gauge pressure
 453 0 – 0.6 bar gauge pressure
 454 0 – 1 bar gauge pressure
 455 0 – 1.6 bar gauge pressure
 456 0 – 2.5 bar gauge pressure
 457 0 – 4 bar gauge pressure
 458 0 – 6 bar gauge pressure
 459 0 – 10 bar gauge pressure
 460 0 – 16 bar gauge pressure

¹ see “Dimensions” for type of connection only for spans between 1 bar and 25 bar

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461	0 — 25 bar gauge pressure
462	0 — 40 bar gauge pressure
463	0 — 60 bar gauge pressure
464	0 — 100 bar gauge pressure
465	0 — 160 bar gauge pressure
466	0 — 250 bar gauge pressure
467	0 — 400 bar gauge pressure
468	0 — 600 bar gauge pressure
487	0 — 0.6 bar absolute pressure
488	0 — 1 bar absolute pressure
489	0 — 1.6 bar absolute pressure
490	0 — 2.5 bar absolute pressure
491	0 — 4 bar absolute pressure
492	0 — 6 bar absolute pressure
493	0 — 10 bar absolute pressure
494	0 — 16 bar absolute pressure
495	0 — 25 bar absolute pressure
998	special range absolute pressure
999	special range gauge pressure

(4) Output

405	4 — 20 mA 2-wire
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(5) Process connection (not front-flush)

502	G ^{1/4} to DIN EN 837
504	G 1/2 to DIN EN 837 (standard connection)
511	1/4-18 NPT to DIN 837
512	1/2-14 NPT to DIN 837
523	G 1/2 to DIN 3852 T11

Process connection (front-flush) ⁵

571	G ^{3/4} to DIN 3852 T11 ²
574	G ^{1/2} front seal ³
575	G ^{3/4} front seal ²
603	taper connection with slotted nut to DIN11851, DN20 ²
604	taper connection with slotted nut to DIN11851, DN25 ²
605	taper connection with slotted nut to DIN11851, DN32 ²
606	taper connection with slotted nut to DIN11851, DN40 ²
607	taper connection with slotted nut to DIN11851, DN50 ²
612	clamp connection to DIN 32676, DN10 ² , DN15 ² and DN20 ²
613	clamp connection to DIN 32676, DN25 ² , DN32 ² and DN40 ²
616	clamp connection to DIN 32676, DN50 ²
652	tank connection with slotted union nut ²
685	level probe version closed ⁴
685	Varivent DN 32/25 ²
999	special process connection

² only for spans between 1 bar and 25 bar.

³ only for ranges from 60 to 400 bar.

⁴ only in conjunction with extra code 406.

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- (6) Material of process connection**
- 20 stainless steel
- 99 special material for process connection
- (7) Electrical connection ¹**
- 12 attached screened cable (cable length in plain text)
- 36 circular connector M12 x 1
- 61 terminal box
- 75 terminal head
- 99 special electrical connection
- (8) Filling medium for measurement system**
- 0 no filling medium
- 1 silicone oil⁵
- 9 special filling medium
- (9) Extra codes (on request only)**
- 000 keine
- 406 IP68 protection to EN 60 529 ⁶

¹ see "Dimensions" for type of connection
² not for nominal ranges 0 — 100 bar to 0 — 600 bar gauge pressure
³ only in conjunction with electrical connection 12 "attached connecting cable..."
⁴
⁵ only for ranges up to 25 bar.

Order code (1) (2) (3) (4) (5) (6) (7) (8) (9)
 404753 / 000 - [] - 405 - [] - 20 - [] - [] / []

⁵ not for nominal ranges 0 — 100 bar to 0 — 600 bar gauge pressure.
⁶ only in conjunction with electrical connection 12 "attached connecting cable..."