

Filling level measurement with liquids

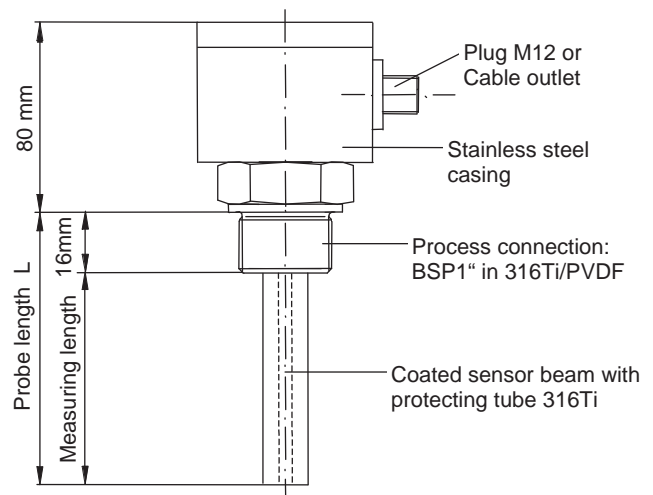
CPA 01



Characteristics

- ▶ Analogous output 4-20mA proportional to filling level
- ▶ Max. measurement range: 1000 mm; also suitable for short measuring
- ▶ Simple calibration at keypress
- ▶ Operating pressure max. 16 bar
- ▶ Vertical installation
- ▶ Thread BSP1" and protective tube in stainless steel 316Ti
- ▶ Electrical connection: Cable outlet, plug M12
- ▶ Measuring accuracy: 1% of measurement range
- ▶ Material housing in stainless steel 304
- ▶ Tube and sensor beam are exchangeable and can be shortened

Dimensions



Application:

For liquids with low dielectricity, such as oil, hydraulics, cooling lubricant, emulsions, water, diesel, etc., suitable for metal and plastic container

Scope of Application:

Process and manufacturing technology, environmental technology, water engineering, plant and mechanical engineering, lubricant technology, commercial vehicle construction, dosing systems etc.

Description

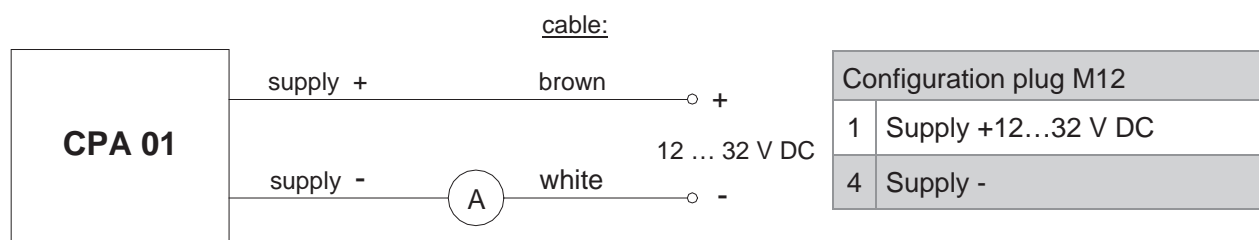
The sensing probe and the protecting tube are building an electrical condenser when being immersed into the liquid. The capacity of the condenser changes with its filling level.

An electronic system integrated into the device converts the capacity change into an electrical standard signal 4-20mA proportionally to the filling level.

Calibration 0% and 100% is made at keypress (TEACH IN).

The CPA 01 will be programmed by the factory if required by the customer (0% and 100% marker can be set if required by the customer).

Electrical connection



Technical data

Operating voltage	12 – 32V DC	Process connection	BSP1“ of 316Ti / PVDF
Output	4-20mA (2-wire)		length of the thread: 16 mm
Measuring accuracy	1% of measuring length	Electrical connection	plug M12 or cable outlet
Environmental temp.	-30°C to +70°C	Probe length L	max. 1000 mm
Medium temperature	-30°C to +100°C	Casing	Ø 67x55 mm of stainless steel 304
Pressure	max. 16 bar	Sensor beam	Ø 5 mm made of stainless steel, coated with elastomer-hose
Protection class	IP65		

Type key, order scheme

CPA 01

Process connection
 A Screw thread BSP 1"
 X other designs on request

Electrical connection
 2P Cable output 2 m PVC cable, standard
 └ In case of other cable length, specification is in metres
 2U Cable output 2 m PUR cable, standard
 └ In case of other cable length, specification is in metres
 M12 Plug output M12
 X Other designs on request

Probe Length L (Probe Length=measuring length +16 mm)
 Dimensions in mm (length from sealing face of process connection to the end of the sensor beam, max. 2000mm)

CPA 01

Accessory: Circular connector M12

Type		Item number	Design
Coupling M12 with	2 m PVC cable	K12PVC 2	
	5 m PVC cable	K12PVC 5	
	2 m PUR cable	K12PUR 2	
	5 m PUR cable	K12PUR 5	
Angle coupling M12 with	2 m PVC cable	W12PVC 2	
	5 m PVC cable	W12PVC 5	
	2 m PUR cable	W12PUR 2	
	5 m PUR cable	W12PUR 5	

Colour identification	
1	brown
4	black

Edition: 2/2013. Technical specifications are for information only and may change without notice.

Filling level measurement with liquids and powdery or fine-granular bulk material

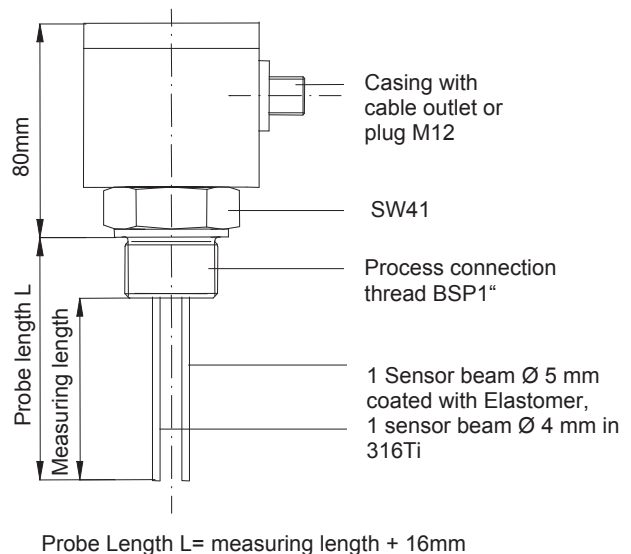
CPA 02



Characteristics

- ▶ Analogous output 4-20mA proportional to filling level
- ▶ Max. measurement range: 2000 mm; also suitable for short measuring
- ▶ Simple calibration at keypress
- ▶ Operating pressure max. 10 bar
- ▶ Vertical installation
- ▶ Thread BSP1" in stainless steel 316Ti
- ▶ Electrical connection: Cable outlet, plug M12
- ▶ Measuring accuracy: 1,5% of measurement range
- ▶ Material housing in stainless steel 304
- ▶ Sensor beams are exchangeable and can be shortened

Dimensions



Application:

- ▶ For liquids and powdery or fine-granular bulk material
- ▶ Suitable for metal and plastic container

Scope of Application:

Process and manufacturing technology, environmental technology, water and waste water engineering, Plant and mechanical engineering, plastic industries etc.

Description

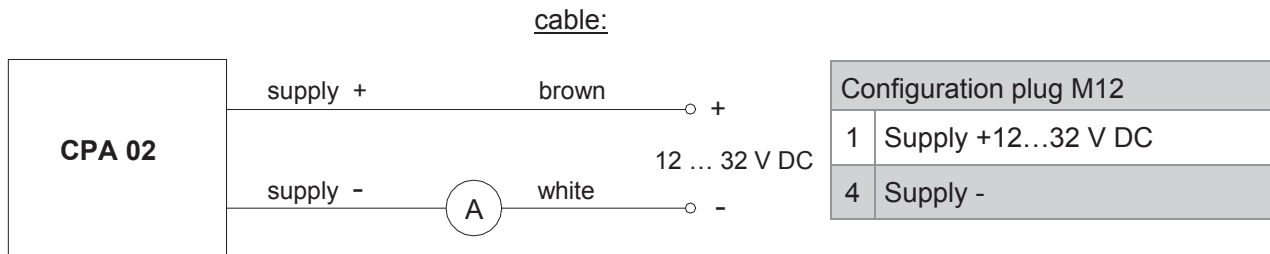
The sensor with 2 sensing probes are building an electrical condenser when being immersed into the liquid. The capacity of the condenser changes with its filling level.

An electronic system integrated into the device converts the capacity change into an electrical standard signal 4-20mA proportionally to the filling level.

Calibration 0% and 100% is made at keypress (TEACH IN).

The CPA 01 will be programmed by the factory if required by the customer (0% and 100% marker can be set if required by the customer).

Electrical connection



Technical data

Operating voltage	12 – 32V DC	Electrical connection	cable outlet or plug M12
Output	4-20mA (2-wire)	Probe length L	max. 2000 mm,
Measuring accuracy	1,5 % of measuring range	Casing	Ø 67 x 55 mm of stainless steel 304
Protection class	IP65	Sensor beam	1 sensor beam Ø 4 mm of stainless steel 316Ti, 1 sensor beam Ø 5 mm coated with elastomer-hose
Environmental temp.	-30°C to +70°C		
Medium temperature	-30°C to +100°C		
Pressure	max.10 bar >10 bar on request		
Process connection	BSP 1" of stainless steel 316Ti / PVDF		

Type key, order scheme

CPA 02

Process connection
 A Screw thread BSP 1"
 X other designs on request

Electrical connection
 2P Cable output 2 m PVC cable, standard
 L In case of other cable length, specification is in metres
 2U Cable output 2 m PUR cable, standard
 L In case of other cable length, specification is in metres
 M12 Plug output M12
 X Other designs on request

Probe Length L (Probe Length=measuring length +16 mm)
 Dimensions in mm (length from sealing face of process connection to the end of the sensor beam, max. 2000mm)

The diagram shows a type key for CPA 02, represented as a horizontal bar divided into four segments. The first segment contains the text 'CPA 02'. Three arrows point downwards from the text above to the second, third, and fourth segments of the bar, indicating where to specify process connection, electrical connection, and probe length L respectively.

Accessory: Circular connector M12

Type		Item number	Design
Coupling M12 with	2 m PVC cable	K12PVC 2	
	5 m PVC cable	K12PVC 5	
	2 m PUR cable	K12PUR 2	
	5 m PUR cable	K12PUR 5	
Angle coupling M12 with	2 m PVC cable	W12PVC 2	
	5 m PVC cable	W12PVC 5	
	2 m PUR cable	W12PUR 2	
	5 m PUR cable	W12PUR 5	

Colour identification	
1	brown
4	black

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Filling level measurement with liquids and powdery or fine-granular bulk material in plastic PVC or PVDF

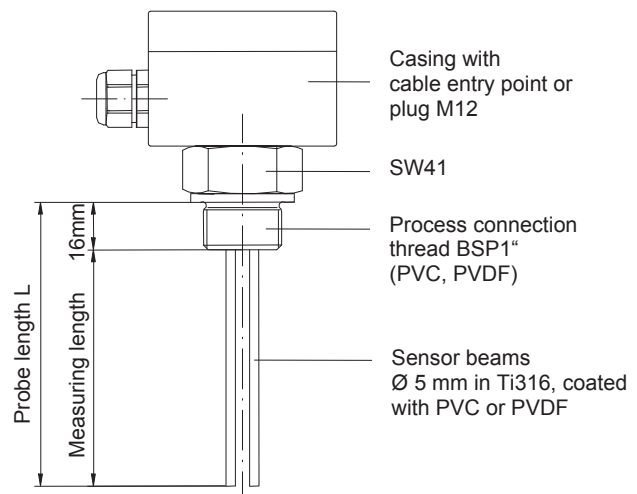
CPA 03



Characteristics

- ▶ Analogous output 4-20mA proportional to filling level
- ▶ Max. measurement range: 2000 mm
- ▶ Simple calibration at keypress
- ▶ Suitable for aggressive medium
- ▶ Sensor beams coated with PVC, PVDF-hose
- ▶ Optional other material
- ▶ Electrical connection: cable entry point, plug M12
- ▶ Measuring accuracy: 1,5% of measurement range
- ▶ Pressure max. 4bar
- ▶ Installation vertical

Dimensions



Characteristics:

- ▶ For liquids with middle or upper dielectricity and powdery or fine-granular bulk material
- ▶ For aggressive medium such as acids and bases
- ▶ Suitable for metal and plastic container

Scope of Application:

Chemical and pharmaceuticals, process and manufacturing technology, environmental technology, water and waste water engineering, plant and mechanical engineering etc.

Description

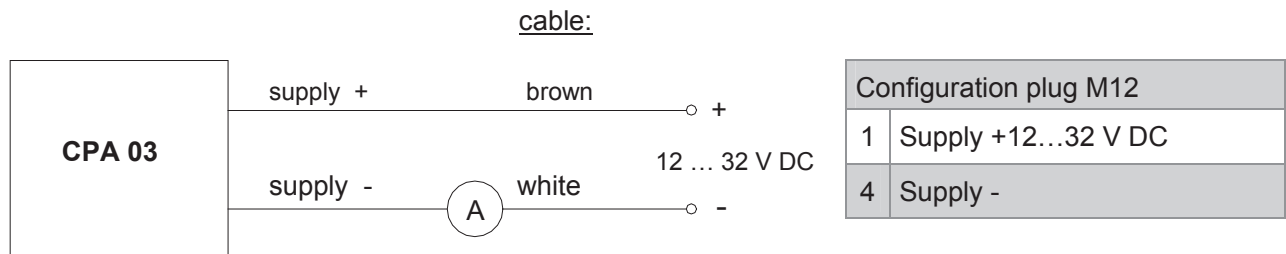
The sensor with 2 sensing probes are building an electrical condenser when being immersed into the liquid. The capacity of the condenser changes with its filling level.

An electronic system integrated into the device converts the capacity change into an electrical standard signal 4-20mA proportionally to the filling level.

Calibration 0% and 100% is made at keypress (TEACH IN).

The CPA 01 will be programmed by the factory if required by the customer (0% and 100% marker can be set if required by the customer).

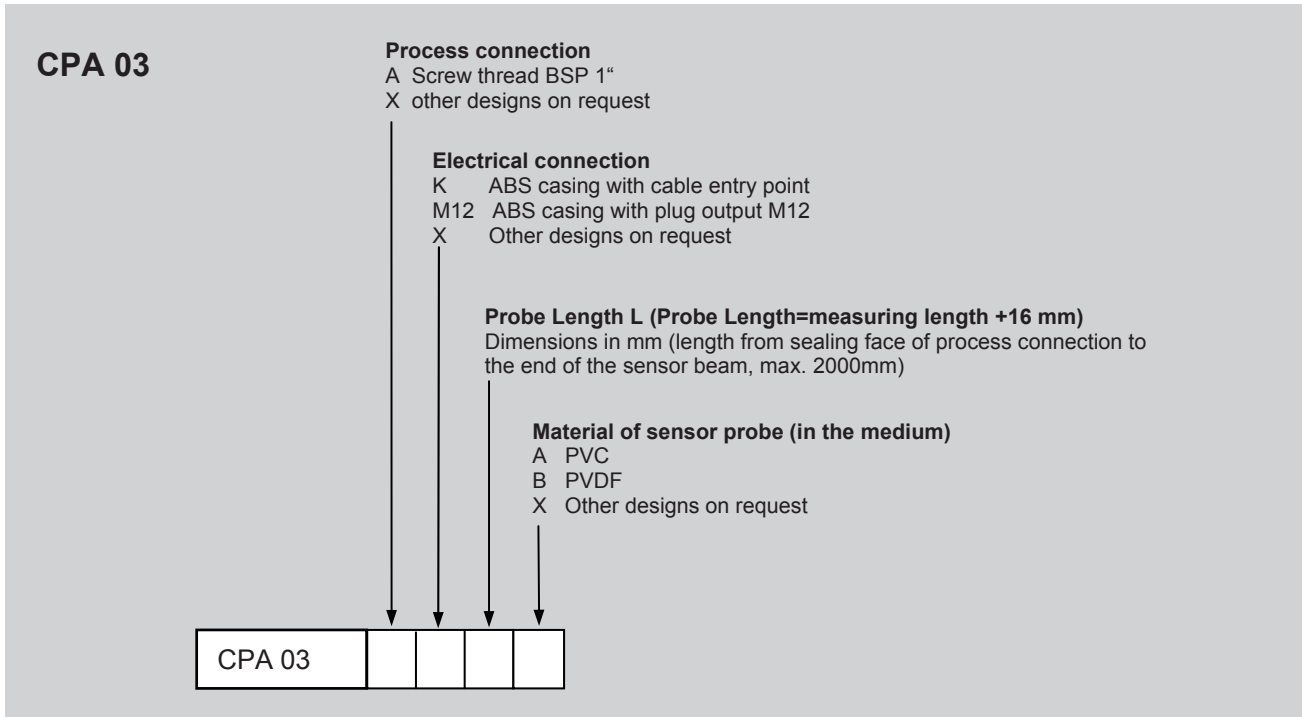
Electrical connection



Technical data

Operating voltage	12 – 32V DC	Process connection	BSP 1" in PVC or PVDF
Output	4-20mA (2-wire)	Electrical connection	cable entry point or plug M12
Measuring accuracy	1,5 % of measuring range	Probe length L	max. 2000 mm
Protection class	IP66	Casin	Plastic ABS 80x82x55mm
Environmental temp.	-30°C to +70°C	Sensor beam	2 sensor beams Ø 5 mm coated with elastomer-hose
Medium temperature	-30°C to +100°C		
Pressure	max. 4 bar		

Type key, order scheme



Accessory: Circular connector M12

Type		Item number	Design
Coupling M12 with	2 m PVC cable	K12PVC 2	
	5 m PVC cable	K12PVC 5	
	2 m PUR cable	K12PUR 2	
	5 m PUR cable	K12PUR 5	
Angle coupling M12 with	2 m PVC cable	W12PVC 2	
	5 m PVC cable	W12PVC 5	
	2 m PUR cable	W12PUR 2	
	5 m PUR cable	W12PUR 5	

Colour identification	
1	brown
4	black