

# Extract M

## TECHNICAL INFORMATION

Manual retractable probe housing



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EXNER PROCESS EQUIPMENT GmbH

## Imprint

Distributed by:

**Exner Process Equipment GmbH**

Carl-Metz-Str. 26

D-76275 Ettlingen

Date of issue: 2026-04-15

As per: 15.04.2026

File: Technical information EXtract M 260415

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# 1 Technical data

## 1.1 Standards

The following standards were applied when manufacturing the retractable probe housing:

- Pressure equipment directive

## 1.2 Material properties

Wetted components			
Probe housing			
EXtract	Stainless steel	Plastic	Seals
810M/811M/815 M	1.4404/316L Alloy C22, 2.4602		EPDM, FPM, FFKM
820M/825M		PVDF, PEEK, PP	EPDM, FPM, FFKM
821M		PVDF, PEEK	EPDM, FPM, FFKM
830M	1.4404/316L		EPDM (FDA), FPM

Drive unit			
EXtract	Cylinder	Cylinder extension	Seals
All types	1.4404/316L	PA66 GF30	EPDM

## 1.3 Cleaning ports

Thread	
Without a gland	G 1/8" (female)
With a gland	G 1/4" (female)
With a gland	NPT 1/4" (female)

**Cleaning pressure**

1-4 bar

## 1.4 Sensors

**Gel-filled sensor**

EXtract	l [mm]	d [mm]	PG
810M / 820M	225	12	13.5
811M / 821M	325	12	13.5
815M / 825M	225	12	13.5
830M	225	12	13.5

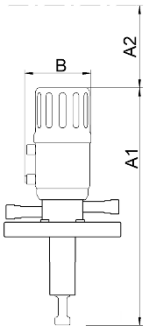
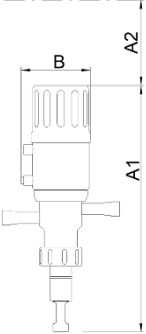
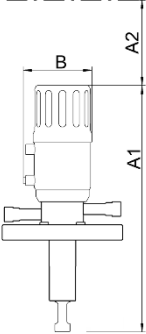
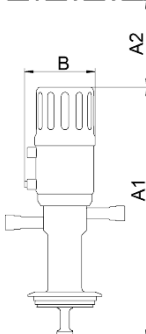
**Sensor filled with liquid with refill connection**

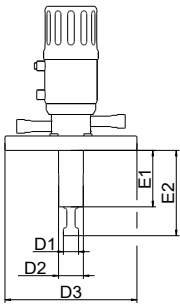
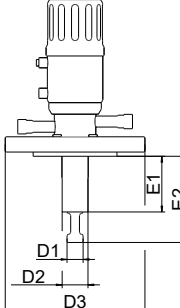
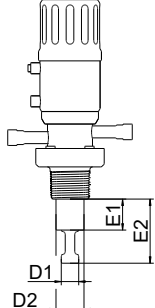
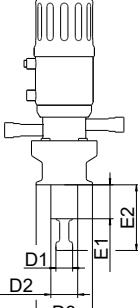
EXtract	l [mm]	d [mm]	PG
810M / 820M	280	12	13.5
811M / 821M	380	12	13.5
815M / 825M	280	12	13.5
830M	280	12	13.5

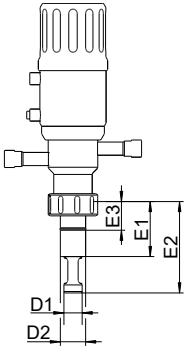
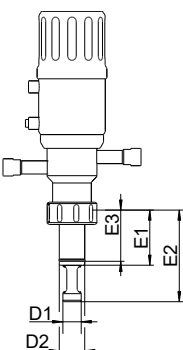
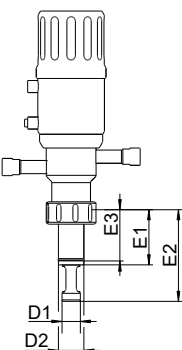
## 1.5 IP protection class

Protection class IP 66 is valid for the drive unit for all types.

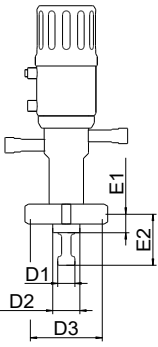
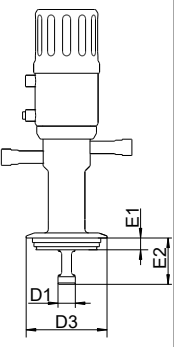
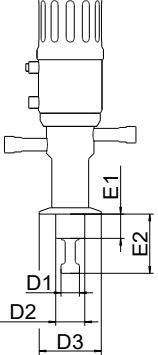
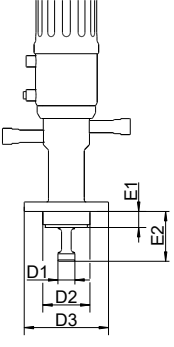
## 1.6 Dimensions

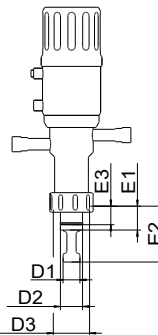
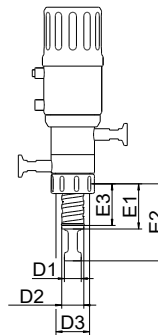
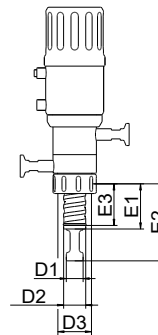
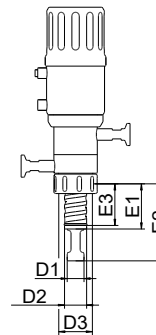
Probe housing								
								
Measure- ments [mm]	EXtract		EXtract		EXtract		EXtract	
	810M	811M	815M	825M	820M	821M	830M	
A1	287	387	287	287	287	387	287	
A2	350	480	350	350	350	480	350	
B	69	69	69	69	69	69	69	

Process connections EXtract 810M/811M						
	Flange 4404		Flange C22		NPT	TriClamp
						
Measure-ments [mm]	EXtract		EXtract		EXtract	EXtract
	810M	811M	810M	811M	810M	810M
E1	71	171	66	166	34	39
E2	107	207	102	202	70	75
D1	19	19	19	19	19	19
D2	31	36	31	36	31	31
D3	-	-	-	-	-	64

Process connections EXtract 815M/825M			
	Ingold DN 25	Ingold DN 25	Ingold DN 25
			
Measurements [mm]	EXtract	EXtract	EXtract
	815M	815M	825M
E1	54	54	33
E2	90	90	69
E3	28	50	25
D1	18	18	18
D2	25	25	25

Process connections EXtract 820M/821M				
	Flange		NPT	
Measurements [mm]	EXtract		EXtract	
	820M	821M	820M	821M
E1	58	158	29	-
E2	94	194	65	-
D1	19	19	19	-
D2	31	36	30.5	-

Process connections EXtract 830M					
	DIN 11851	Varivent N	TriClamp		Neumo BioControl
					
Measurements [mm]	DN50	DN40 - 125	1.5"	2"	DN 50
E1	18	12.3	22	25	17
E2	54	48.3	58	61	48
D1	19	19	19	19	19
D2	30	-	30	30	50
D3	Rd78 x 1/6"	84	50.5	64	89.5

Process connections EXtract 830M				
	Ingold DN 25	Ingold HyCIP25	Ingold HyCIP50	Ingold HyCIP55
				
Measure- ments [mm]	O-ring position [mm]			
	28	25	50	55
E1	34	29	54	59
E2	70	65	90	95
E3	28	25	50	55
D1	19	19	19	19
D2	25	25	25	25
D3	G 1 1/4"	G 1 1/4"	G 1 1/4"	G 1 1/4"

## 1.7 Environmental conditions

Ambient temperature -10...70 °C

Transport and storage temperature -20...80 °C

## 1.8 Process conditions EXtract 810M / 811M / 815M / 830M

Max. permissible pressure PS: 16 bar

Max. permissible temperature TS: 140 °C

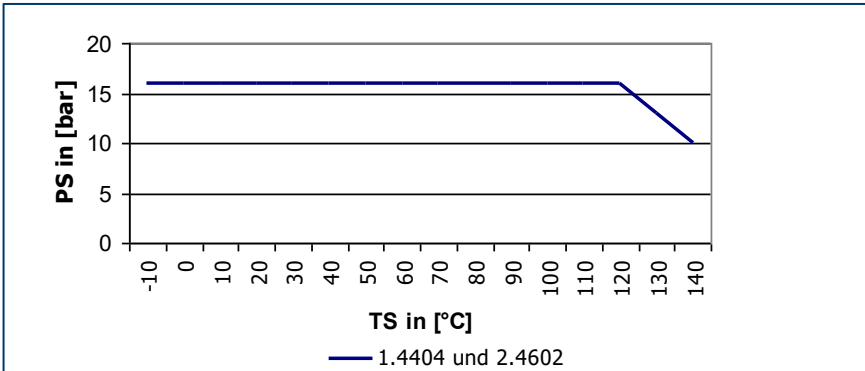


Fig. 1: Pressure temperature diagram EXtract 810M/ 811M/ 815M/ 830M

## 1.9 Process conditions EXtract 820M / 821M / 825M

Max. permissible pressure PS: 10 bar

Max. permissible temperature TS: 140 °C

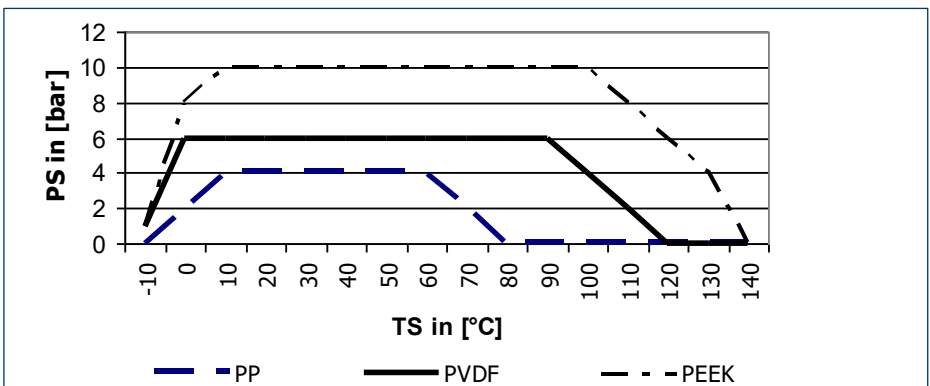


Fig. 2: Pressure temperature diagram EXtract 820M/ 821M/ 825M

## 1.10 Identification plate

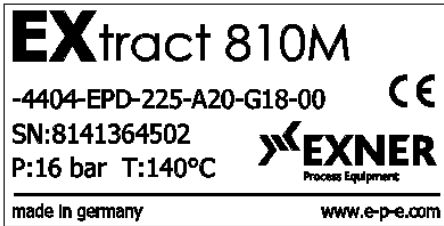


Fig. 3: Identification plate

## 2 Product description

### 2.1 Manual EXtract retractable probe housing

#### 2.1.1 Components

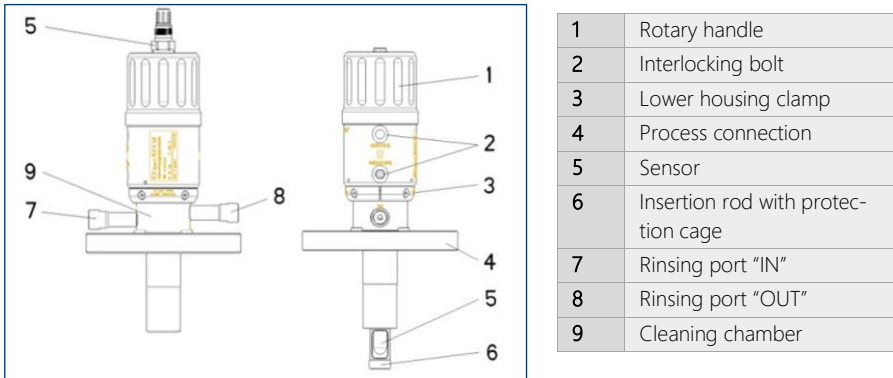


Fig. 4: Retractable probe housing

#### 2.1.2 Versions

Retractable probe housings are attached to tanks or pipes by an applicable process connection. In order to comply with the various process properties the EXtract M retractable housing is fabricated of stainless steel or plastic. In addition, you can choose between a variety of process and cleaning connections and seal materials.

The pressure and temperature conditions of the process are decisive for the selection of the appropriate probe housing. Stainless steel retractable probe housing can be used for a pressure of up to 16 bar and the plastic model up to 10 bar, temperature-dependent.

#### EXtract 810M / 820M

EXtract 810M / 820M is a manual retractable housing made of stainless steel (810M) or plastic (820M) for installation of  $\varnothing$  12mm sensors on tanks or pipes, with an extended immersion length up to 107mm.

The probe housing can be used for:

- Ø 12 mm/225 mm and Ø 12/280 mm sensors with PG13.5 thread (pH glass and ISFET sensors, conductivity, temperature, turbidity or optical sensors)
- Chemicals
- Water treatment
- Particularly rough processes

### EXtract 811M / 821M

EXtract 811M / 821M is a manually operated retractable probe housing made of stainless steel (811M) or plastic (821M) for installation of Ø 12mm sensors on tanks or pipes, with an extended immersion length up to 207mm.

### EXtract 815M / 825M

The probe housing EXtract 815M / 825M is a manually operated retractable probe housing made of stainless steel (815) or plastic (825) for the installation of Ø 12mm sensors at welding sockets DN25 (Ingold-type socket) with an integrated PTFE scraper.

### EXtract 830M

The probe housing EXtract 830M is a manually operated retractable probe housing made of stainless steel for the installation of Ø 12mm sensors on tanks or pipes

- Ø 12 mm/225 mm and Ø 12/280 mm sensors with PG13.5 thread (pH glass and ISFET sensors, conductivity, temperature, turbidity or optical sensors)
- Food
- Pharmaceuticals
- Hygienic applications

### 2.1.3 Drive unit

The manually operated drive unit of the probe housing is a mechanical rotary drive that dissipates rotating motion into a stroke of the insertion rod. So the sensor can be moved from the cleaning chamber into the process liquid and back again. Because of the smart construction of the drive the sensor can be moved against high process pressure easily.

## 2.1.4 Measure

When reaching the final position of the "measuring" position, a bolt interlocks the position certainly. In this position the sensor head is immersed in the drive unit and cannot be removed. The sensor measures the chemical or physical properties of the process liquid.

## 2.1.5 Service

The sensor may be cleaned and rinsed while the process is running. For this purpose the probe housing must be moved to the "service" position. When the final position is reached, a bolt interlocks the position certainly. In the "service" position the insertion rod seals the cleaning chamber against the process to prevent leakage of process liquid. The rinsing liquid is introduced into the cleaning chamber via the rinsing port "IN" and subsequently drained via the rinsing port "OUT".

# 2.2 Process integration

## Transmitter

The retractable probe housing inserts a sensor into the process liquid, which transmits its measuring results to a transmitter.

## Process control [PCS]

The transmitter can be connected with a process control system. A cleaning request which must, for example, be carried out manually can be output, dependent on the measuring results.

## Pressure / Temperature

The pressure and temperature conditions of the process are decisive for the selection of the appropriate probe housing. The retractable housing of stainless steel can be used for a pressure of up to 16 bar and the plastic model up to 10 bar according to the temperature. The process temperature should be between -10°C and 140°C.

**NOTE**

Observe pressure and temperature charts → Chapter 1 “Technical data”

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### Installation position

Basically, the probe housing can be operated in any position. In order to obtain reliable measurement results, the sensor properties are decisive.

## 3 Ordering structure

### 3.1 Retractable probe housing EXtract 810M

Code	Probe housing, material (wetted parts)	
4404	Stainless steel 1.4404 / 316L	
HC22	Alloy C22, 2.4602	
XXXX	Special version	
Code	Sealing material (wetted seals)	
EPD	EPDM	
FPM	FPM	
FKM	FFKM	
XXX	Special version	
Code	Sensor	
225	225 mm PG 13.5 gel-filled	
280	280 mm PG 13.5 filled with liquid	
XXX	Special version	
Code	Process connection	
D32	Flange DN32	
D40	Flange DN40	
D50	DN50 flange	
A14	Flange ANSI 1 ¼"	
A12	Flange ANSI 1 ½"	
A20	Flange ANSI 2"	
N14	NPT M 1 ¼"	
T20	Tri Clamp 2"	
XXX	Special version	
Code	Rinsing connection	
G18	G 1/8" (female)	
G14	G ¼" (female)	
N14	NPT ¼" (female)	
XXX	Special version	
Code	Position reply	
00	Without	
EL	Electrical (NAMUR)	
EXtract 810 M		Order code

Example: EXtract 810M-4404-FPM-225-D50-G18-00

### 3.2 Retractable probe housing EXtract 811M

	<b>Code</b>	<b>Holder (wetted material)</b>	
	4404	Stainless steel 1.4404 / 316L	
	HC22	Alloy C22, 2.4602	
	XXXX	Special version	
	<b>Code</b>	<b>Sealing material (wetted seals)</b>	
	EPD	EPDM	
	FPM	FPM	
	FKM	FFKM	
	XXX	Special version	
	<b>Code</b>	<b>Sensor</b>	
	325	325 mm PG 13.5 gel-filled	
	380	380 mm PG 13.5 filled with liquid	
	XXX	Special version	
	<b>Code</b>	<b>Process connection</b>	
	D40	Flange DN40	
	D50	Flange DN50	
	A12	Flange ANSI 1 1/2"	
	A20	Flange ANSI 2"	
	XXX	Special version	
	<b>Code</b>	<b>Rinsing connection</b>	
	G18	G 1/8" (female)	
	G14	G 1/4" (female)	
	N14	NPT 1/4" (female)	
	XXX	Special version	
	<b>Code</b>	<b>Position reply</b>	
	00	Without	
	EL	Electrical (NAMUR)	
EXtract 811M			<b>Order code</b>

Example: EXtract 811M-4404-FPM-225-D50-G18-00

### 3.3 Retractable probe housing EXtract 815M

Code	Holder (wetted material)	
4404	Stainless steel 1.4404 / 316L	
HC22	Alloy C22, 2.4602	
XXXX	Special version	
Code	Sealing material (wetted seals)	
EPD	EPDM	
FPM	FPM	
FKM	FFKM	
XXX	Special version	
Code	Sensor	
225	225 mm PG 13.5 gel-filled	
280	280 mm PG 13.5 filled with liquid	
XXX	Special version	
Code	Process connection	
IN28	Ingold DN25 G1 ¼ O-ring Pos. 28mm	
IN50	Ingold DN25 G1 ¼ O-ring Pos. 50mm	
XXXX	Special version	
Code	Rinsing connection	
G18	G 1/8" (female)	
G14	G ¼" (female)	
N14	NPT ¼" (female)	
XXX	Special version	
Code	Position reply	
00	Without	
EL	Electrical (NAMUR)	
EXtract 815M	Order code	

Example: EXtract 815M- HC22-FKM-225-IN50-G18-00

### 3.4 Retractable probe housing EXtract 820M

	<b>Code</b>	<b>Holder (wetted material)</b>	
	PP	PP	
	PVDF	PVDF	
	PEEK	PEEK	
	XXXX	Special version	
	<b>Code</b>	<b>Sealing material (wetted seals)</b>	
	EPD	EPDM	
	FPM	FPM	
	FKM	FFKM	
	XXX	Special version	
	<b>Code</b>	<b>Sensor</b>	
	225	225 mm PG 13.5 gel-filled	
	280	280 mm PG 13.5 filled with liquid	
	XXX	Special version	
	<b>Code</b>	<b>Process connection</b>	
	D50	Flange DN50	
	A20	Flange ANSI 2"	
	N14	NPT M 1 1/4"	
	XXX	Special version	
	<b>Code</b>	<b>Rinsing connection</b>	
	G18	G 1/8" (female)	
	G14	G 1/4" (female)	
	N14	NPT 1/4" (female)	
	XXX	Special version	
	<b>Code</b>	<b>Position reply</b>	
	00	Without	
	EL	Electrical (NAMUR)	
EXtract 820M			<b>Order code</b>

Example: EXtract 820M-PP-EPD-280-A20-G14-00

### 3.5 Retractable probe housing EXtract 821M

Code	Holder (wetted material)	
PVDF	PVDF	
PEEK	PEEK	
XXXX	Special version	
Code	Sealing material (wetted seals)	
EPD	EPDM	
FPM	FPM	
FKM	FFKM	
XXX	Special version	
Code	Sensor	
325	325 mm PG 13.5 gel-filled	
380	380 mm PG 13.5 filled with liquid	
XXX	Special version	
Code	Process connection	
D50	Flange DN50	
A20	Flange ANSI 2"	
N14	NPT M 1 1/4"	
XXX	Special version	
Code	Rinsing connection	
G18	G 1/8" (female)	
G14	G 1/4" (female)	
N14	NPT 1/4" (female)	
XXX	Special version	
Code	Position reply	
00	Without	
EL	Electrical (NAMUR)	
EXtract 821M		Order code

Example: EXtract 821M-PVDF-FPM-325-A20-G14-00

### 3.6 Retractable probe housing EXtract 825M

	<b>Code</b>	<b>Holder (wetted material)</b>	
	PP	PP	
	PVDF	PVDF	
	PEEK	PEEK	
	XXXX	Special version	
	<b>Code</b>	<b>Sealing material (wetted seals)</b>	
	EPD	EPDM	
	FPM	FPM	
	FKM	FFKM	
	XXX	Special version	
	<b>Code</b>	<b>Sensor</b>	
	225	225 mm PG 13.5 gel-filled	
	280	280 mm PG 13.5 filled with liquid	
	XXX	Special version	
	<b>Code</b>	<b>Process connection</b>	
	IN25	Ingold DN25 G1 1/4" O-ring position 25 mm	
	XXXX	Special version	
	<b>Code</b>	<b>Rinsing connection</b>	
	G18	G 1/8" (female)	
	G14	G 1/4" (female)	
	N14	NPT 1/4" (female)	
	XXX	Special version	
	<b>Code</b>	<b>Position reply</b>	
	00	Without	
	EL	Electrical (NAMUR)	
<b>EXtract 825M</b>			<b>Order code</b>

Example: EXtract 825M-PVDF-FPM-225-IN25-N14-00

### 3.7 Retractable probe housing EXtract 830M

Code	Probe housing, wetted material	
4404	Stainless steel, 1.4404 / 316L	
XXXX	Special version	
Code	Seals, wetted material	
EPD	EPDM / FEP (FDA/USP VI)	
FPM	FPM (Viton) / FEP	
XXX	Special version	
Code	Sensor	
225	225 mm PG 13.5 gel-filled	
280	280 mm PG 13.5 filled with liquid	
XXX	Special version	
Code	Process connection	
IN28	Ingold DN25 (G 1 1/4") O-ring pos. 28 mm	
IH25	HyCIP® Ingold (G1 1/4") O-ring pos. 25mm	
IH50	HyCIP® Ingold (G1 1/4") O-ring pos. 50mm	
IH55	HyCIP® Ingold (G1 1/4") O-ring pos. 55mm	
VARN	Varivent N DN40-125	
TC15	TriClamp 1.5" (OD Ø 50.5 mm)	
TC20	TriClamp 2" (OD Ø 64 mm)	
BCT5	NEUMO BioControl 50	
MV50	DIN 11851 DN50 (milk pipe)	
XXXX	Special version	
Code	Rinsing connection	
G18	G 1/8" (female)	
G14	G 1/4" (female)	
N14	NPT 1/4" (female)	
XXX	Special version	
Code	Position reply	
00	Without	
EL	Electrical (NAMUR)	
EXtract 830M	Order code	

Example: EXtract 830M-4404-FPM-225-TC20-G18-00

## 4 Spare parts and Accessories

The probe housing serial number must always be quoted for spare parts and accessories orders.

EXtract	Accessories	Order number
810M/811M/ 815M/830M	Blind plug set G1/8" 1.4404	2-086-32-001
810M/811M/815M	Blind plug set G1/8" 2.4602 / C22	2-086-34-001
810M/811M/815M	Sensor cable protective device EXtract 8XXM	2-086-34-002
815M/825M/830M	Safety weld-in socket DN25 straight, 40mm, 1.4404 / 316L	2-087-33-001
815M/830M	Safety weld-in socket DN25 inclined, 40mm, 1.4404 / 316L	2-087-33-002
815M/825M/830M	Safety bracket SK25 for welding socket DN25 (Ingold)	2-140-33-002
820M/821M/825M	Blind plug set G1/8" PVDF	2-086-23-001
820M/821M/825M	Blind plug set G1/8" PP	2-086-22-001
820M/821M/825M	Blind plug set G1/8" PEEK	2-086-29-001
830M	Cleaning gland for EXtract830M TriClamp 3/4" Ø10.3 (2 pcs. with EPDM sealing) for HyCIP® G1 1/4"	2-069-33-007
830M	Cleaning gland for EXtract830M TriClamp 3/4" Ø10.3 (2 pcs. with FPM sealing) for HyCIP® G1 1/4"	2-069-33-008
810M/811M/815M/825M 820M/821M/830M	Power stage terminal NAMUR sensor	2-110-00-003
	Set connecting cable position switch, 2m (NAMUR)	2-125-03-001
	Set connecting cable position switch, 5m (NAMUR)	2-125-03-002

## 4.1 Drive unit with

EXtract	Spare part	Order number
810M/811M/815M/825M 820M/821M/830M	Drive unit for sensor L = 225/325 mm	2-075-03-005
	Drive unit for sensor L = 280/380 mm	2-075-03-006
	Drive unit EXtract 8XX M 225/325 mm inductive (NAMUR)	2-075-03-008
	Electrical limit switch NAMUR	2-117-00-001
	Disassembly tool	2-140-10-001
	Unlocking device	2-140-26-001

## 4.2 Sealing kit

EXtract	Spare part	Order number
810M/820M	EPDM sealing kit	2-123-40-001
	FPM sealing kit	2-123-41-001
	FFKM sealing kit	2-123-42-001
811M/821M	EPDM sealing kit	2-123-40-002
	FPM sealing kit	2-123-41-002
	FFKM sealing kit	2-123-42-002
815M/825M	EPDM sealing kit	2-123-40-012
	FPM sealing kit	2-123-41-012
	FFKM sealing kit	2-123-42-012
830M IN28	EPDM / FEP (FDA/USP VI) sealing kit	2-123-40-003
	FPM / FEP sealing kit	2-123-41-003
830M HyCIP®	EPDM / FEP (FDA/USP VI) sealing kit	2-123-40-004
	FPM / FEP sealing kit	2-123-41-004
830M TC15/TC20 + MV50 VARN / BCT5	EPDM / FEP (FDA/USP VI) sealing kit	2-123-40-005
	FPM / FEP sealing kit	2-123-41-005

### 4.3 Insertion rods

EXtract	Spare part	Order number
810M	Insertion rod 1.4404 / 316L	2-061-33-004
	Insertion rod 2.4602 / Alloy C22	2-061-34-004
811M	Insertion rod 1.4404 / 316L	2-061-33-005
	Insertion rod 2.4602 / Alloy C22	2-061-34-005
815M	Insertion rod 1.4404 / 316L	2-061-33-006
	Insertion rod 2.4602 / Alloy C22	2-061-34-006
820M	Insertion rod PP	2-061-22-004
	Insertion rod PVDF/Alloy C22	2-061-23-004
	Insertion rod PEEK	2-061-29-004
821M	Insertion rod PVDF/Alloy C22	2-061-23-005
	Insertion rod PEEK	2-061-29-005
825M	Insertion rod PP	2-061-22-011
	Insertion rod PVDF/Alloy C22	2-061-23-011
	Insertion rod PEEK	2-061-29-011
830M	Insertion rod 1.4404 / 316L	2-061-33-004

## 5 Certificates and compliances

All freely available certificates and conformities can be found in their most current form in the “Downloads” section of our website.

To access the following address, enter it into your browser or scan the QR code below. Then select the relevant product and document from the list.

<https://e-p-e.com/en/downloads>



Depending on the product, additional certificates (e.g. material, surface, etc.) are available. If necessary, please send a corresponding request to Exner Process Equipment GmbH.







Exner Process Equipment GmbH  
Carl-Metz-Str. 26  
D-76275 Ettlingen  
Germany

tel +49 (0)7243-94 54 29-0  
fax +49 (0)7243-94 54 29-99  
mail [info@e-p-e.de](mailto:info@e-p-e.de)

[www.e-p-e.com](http://www.e-p-e.com)