

EXNER PROCESS EQUIPMENT



EXTRACT M

Manual retractable process holder
Technical information

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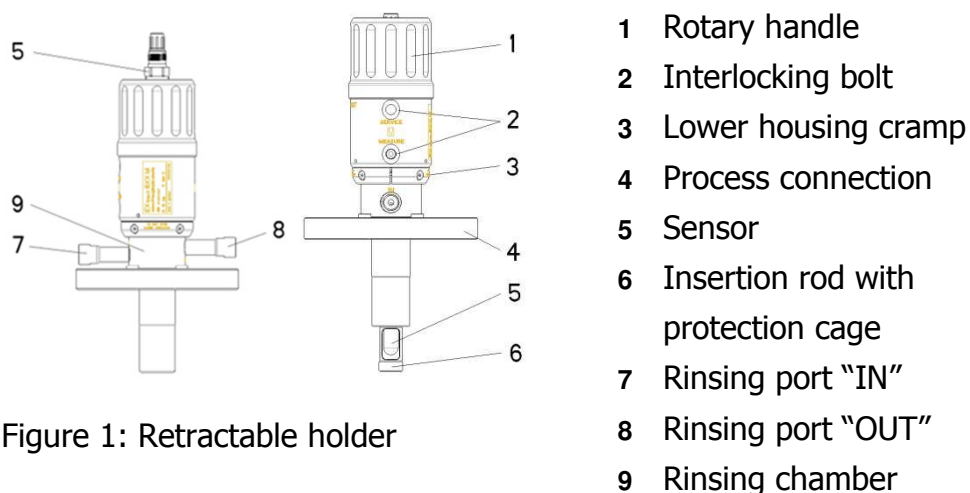
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1 Product description

1.1 EXtract manuel retractable holder

Components



Variations

Retractable holders are attached to tanks or tubing by an applicable process connection. In order to comply with the various process properties the **EXtract M** retractable holder is fabricated of stainless steel or plastic. You can further choose between different process and cleaning ports, sealing materials and sensors.

EXtract 810M/ 820M

EXtract 810M / 820M is a manual retractable holder made of stainless steel (810M) or plastic (820M) for installation of Ø12mm sensors on tanks or pipelines, with an extended immersion length up to 107mm.

- For all kind of Ø12/225mm or Ø12/280mm sensors with thread PG13.5 (pH-glass- and ISFET sensors, conductivity- or temperature sensors, turbidity and other optical sensors)
- Chemicals
- Water treatment
- Rough processes

EXtract 811M / 821M **EXtract 811M / 821M** is a manual retractable holder made of stainless steel (811M) or plastic (821M) for installation of Ø12mm sensors on tanks or pipelines, with an extended immersion length up to 207mm.

Extract 815M / 825M The **EXtract 815M / 825M** is a manual retractable holder made of stainless steel (815M) or plastic (825M) for the installation of Ø12mm sensors at welding sockets DN25 (Ingold-type socket) with an integrated PTFE scraper.

EXtract 830M **EXtract 830M** is a manual retractable holder made of stainless steel for hygienic installation of Ø12 sensors on tanks or pipelines

- For all kind of Ø12/225mm or Ø12/280mm sensors with thread PG13.5 (pH-glass- and ISFET sensors, conductivity- or temperature sensors, turbidity and other optical sensors)
- Food
- Pharmaceuticals

Drive The manual drive of the holder 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.

Measuring 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.

Service Cleaning and rinsing of the sensor is possible while the process is running. For this purpose the holder 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 cleaning liquid is introduced into the cleaning chamber via the cleaning port "IN" and subsequently drained via the cleaning port "OUT".

1.2 Process integration

Transmitter The retractable holder inserts a sensor into the process liquid transmitting its measuring results to a transmitter.

Process control The transmitter can be connected to a process control. According to the measuring signals a cleaning flag can be set. The cleaning has to be done manually.

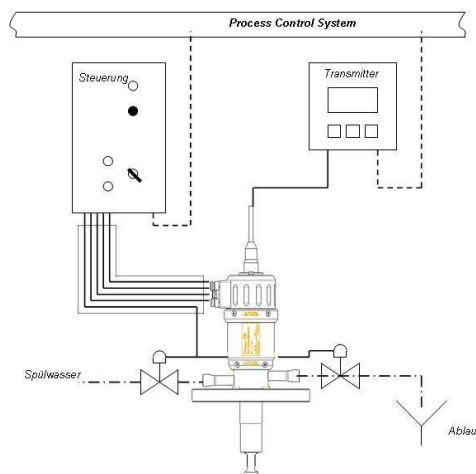


Figure 2: Process flow

Pressure The choice of the applicable holder is subject to the pressure and temperature conditions of the process. The retractable holder 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° and 140°C

Temperature



Observe pressure and temperature charts in chapter 8!

Installation position The operation of the holder is generally possible in any position. The reliability of the measuring results depends on the properties of the selected sensor.

2 Special functions

2.1 Manual operation of the holder

Drive sensor into position „Measure“



Figure 3: position "measure"

Push interlocking bolt and turn rotary handle clockwise until interlocking bolt locks in position „Measure“

Drive sensor into position „Service“



Figure 4: position "service"

Push interlocking bolt and turn rotary handle counter - clockwise until interlocking bolt locks in position „Service“.

2.2 Adjusting the protection cage

A protection cage is fitted to the lower end of the insertion rod and can be adjusted with the flow direction. The symbol on the drive unit cylinder indicates the position of the opening in the insertion rod. If the symbol is parallel to the flow direction the insertion rod is fully flow through. If the symbols are vertical to the flow the sensor is fully protected from direct flow. The insertion rod can be adjusted in any intermediate position.



Figure 5: Protection cage

- A** Sensor maximally streamed
- B** Sensor minimally streamed

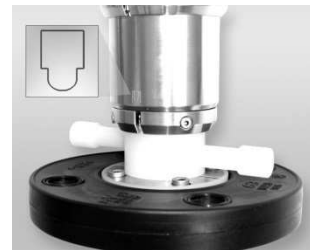


Figure 6: Symbol

2.3 Installing the sensor

Sensors with a diameter of 12mm and a connection thread PG 13.5

must be used in the EXTRACT M retractable holder.

The length of the sensor depends on the sensor type and the selected holder.

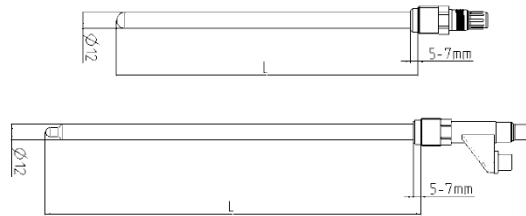


Figure 7: Sensor filled with gel (top), sensor filled with liquid (bottom)

2.4 Installing the rinsing lines

Cleaning of the sensor is possible while the process is running. This requires supply and draining of rinsing liquid to the rinsing chamber. If rinsing of the sensor is not desired the rinsing ports must be sealed by pegs.



A Rinsing port "IN"
B Rinsing port "OUT"

Figure 8: Rinsing connection



How to install the rinsing lines:

1. Install valve and dirt trap in the rinsing pipe for the rinsing liquid supply.
2. Attach supply rinsing pipe to the cleaning port "IN".
3. Install valve in rinsing pipe for drainage of the rinsing liquid.
4. Attach rinsing pipe to the rinsing port "OUT".
5. Check all connections for tightness.



To avoid premature contamination of the sensor the pressure of the cleaning liquid should be at least 1 bar!

2.5 Installing the sensor

Sensors with a diameter of 12mm and a connection thread PG 13.5 must be used in the EXTRACT M retractable holder.

The length of the sensor depends on the sensor type and the selected holder.



Figure 9: Sensor filled with gel (top), sensor filled with liquid (bottom)

2.6 Checking wetted seals

The retractable holder is fitted with an inspection window situated between the lower housing cramps.

Check inspection window for leaking process liquid on a regular basis.



Figure 10: Inspection window on lower housing clamp

3 Technical specifications

3.1 Standards

Pressure equipment directive

3.2 Material properties

Wetted components						
Holder						
EXTRACT	stainless steel		plastic			seals
810M	1.4404/316L	Alloy C22, 2.4602				<ul style="list-style-type: none">• EPDM• FPM• FFKM
811M	1.4404/316L	Alloy C22, 2.4602				
815M	1.4404/316L	Alloy C22, 2.4602				
820M			PVDF	PEEK	PP	
821M			PVDF	PEEK		
825M			PVDF	PEEK	PP	<ul style="list-style-type: none">• EPDM FDA• FPM
830M	1.4404/316L					

Drive unit			
EXTRACT	cylinder	cylinder extension	seals
All types	1.4404/316	PA66 GF30	EPDM

3.3 IP protection

Drive unit	
All types	IP 66

3.4 Rinsing connections

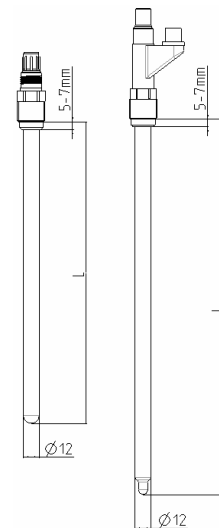
Thread	
without gland	<ul style="list-style-type: none"> G $\frac{1}{8}$" (internal)
with gland	<ul style="list-style-type: none"> G $\frac{1}{4}$" (internal)
with gland	<ul style="list-style-type: none"> NPT $\frac{1}{4}$" (internal)

Rinsing pressure	
	1 - 4 bar

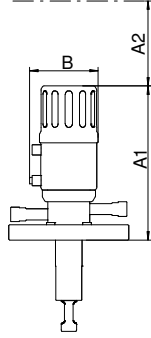
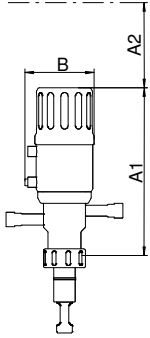
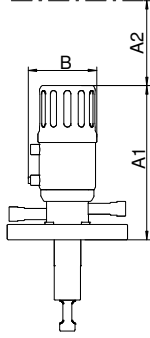
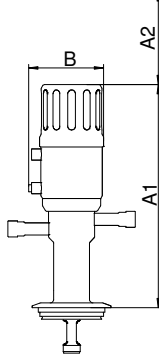
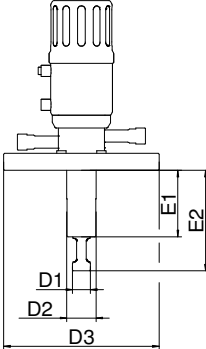
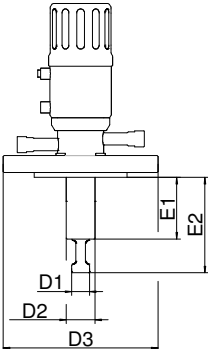
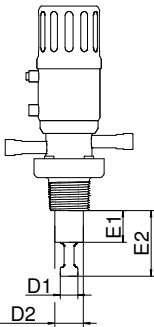
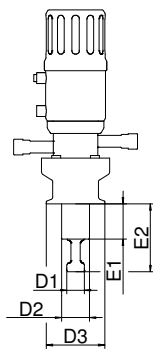
3.5 Sensors

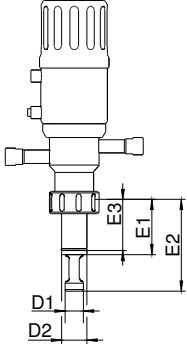
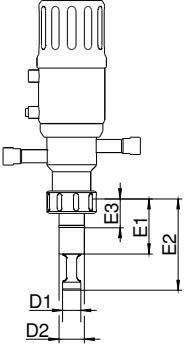
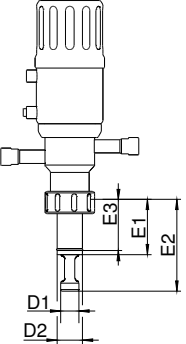
Gel filled sensor			
EXTRACT	l [mm]	d [mm]	PG
810M / 820M	225	12	13.5
811M / 821M	325	12	13.5
815M / 825M	225	12	13,5
830M	225	12	13,5

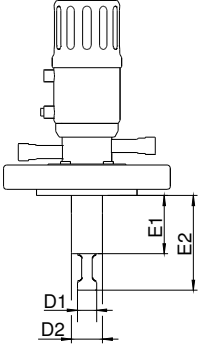
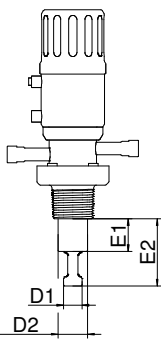
Sensor filled with liquid with refill connection			
EXTRACT	l [mm]	d [mm]	PG
810M / 820M	280	12	13.5
811M / 821M	380	12	13.5
815M / 825M	280	12	13,5
830M	280	12	13,5

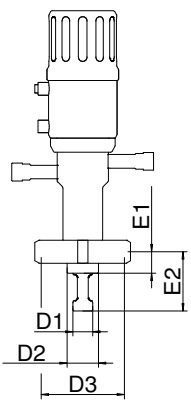
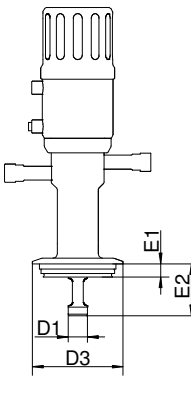
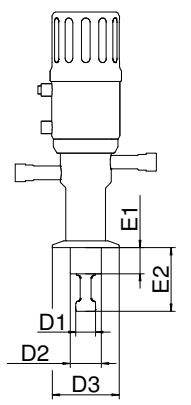
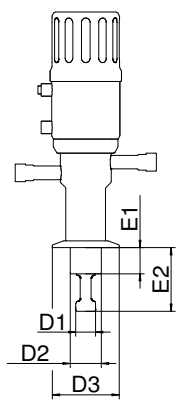
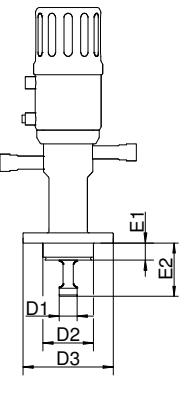


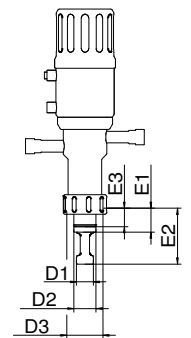
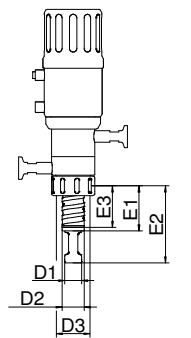
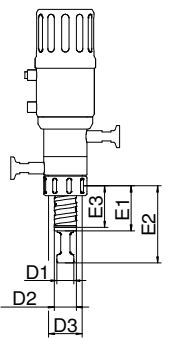
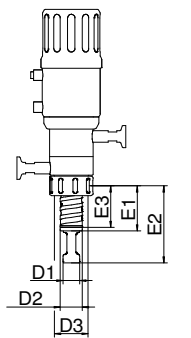
3.6 Dimensions

Holder							
							
Dimens.	EXTRACT		EXTRACT		EXTRACT		EXTRACT
	810M	811M	815M	825M	820M	821M	830M
A1 [mm]	180	180	196	196	180	180	238
A2 [mm]	350	480	350	350	350	480	350
B [mm]	69	69	69	69	69	69	69
Process connections EXTRACT 810M/811M							
	Flange 4404	Flange HC22	NPT	TriClamp			
							
Dimens.	EXTRACT		EXTRACT		EXTRACT	EXTRACT	
	810M	811M	810M	811M	810M	810M	
E1 [mm]	71	171	66	166	34	39	
E2 [mm]	107	207	102	202	70	75	
D1 [mm]	19	19	19	19	19	19	
D2 [mm]	31	36	31	36	31	31	
D3 [mm]	-	-	-	-	-	64	

Process connections EXTRACT 815M			EXtract 825M
	Ingold DN 25	Ingold DN 25	Ingold DN 25
			
	EXtract	EXTRACT	EXTRACT
Dimens.	825M	815M	815M
E1 [mm]	54	54	54
E2 [mm]	90	90	90
E3 [mm]	25	28	50
D1 [mm]	18	18	18
D2 [mm]	25	25	25

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

Process connections EXTRACT 830M					
	DIN 11851	Varivent N	TriClamp		Neumo BioCon.
					
Dimens.	DN50	DN40 - 125	1,5"	2"	DN50
E1 [mm]	18	12,3	22	25	17
E2 [mm]	54	48,3	58	61	48
D1 [mm]	19	19	19	19	19
D2 [mm]	30	-	30	30	50
D3 [mm]	Rd78 x 1/6"	84	50,5	64	89,5

Process connections EXTRACT 830M				
	Ingold DN 25	Ingold HyCIP25	Ingold HyCIP50	Ingold HyCIP55
				
Dimens.	O-RINGPOS. 28MM	O-RINGPOS. 25MM	O-RINGPOS. 50MM	O-RINGPOS. 25MM
E1 [mm]	34	29	54	59
E2 [mm]	70	65	90	95
E3 [mm]	28	25	50	55
D1 [mm]	19	19	19	19
D2 [mm]	25	25	25	25
D3 [mm]	G 1 1/4"	G 1 1/4"	G 1 1/4"	G 1 1/4"

3.7 Ambient conditions

Ambient temperature - 10 - 70 °C

Transport and storage temperature - 20 - 80 °C

3.8 Process conditions EXtract 810M /811M /815M /830M

max. allowed pressure PS: 16 bar

max. allowed temperature TS: 140 °C

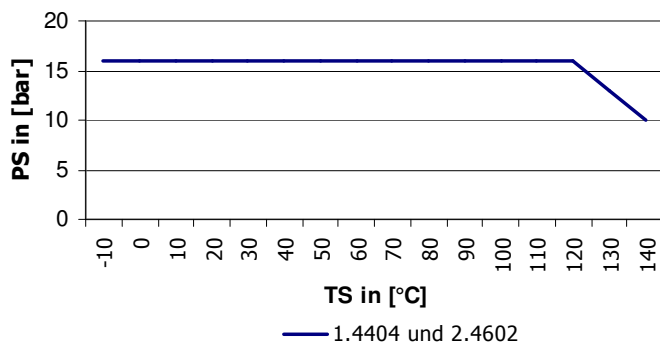


Fig. 1: Pressure temperature diagram EXTRACT 810M/811M/815M/830M

3.9 Process conditions EXtract 820M / 821M /825M

max. allowed pressure PS 10 bar

max. allowed temperature TS 140 °C

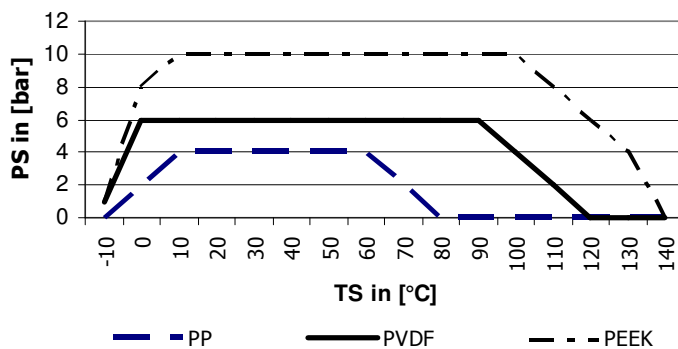


Fig. 2: Pressure temperature diagram EXTRACT 820M/821M/825M

3.10 Order structure EXtract 810M

Retractable holder EXtract 810M											
	Descr.	Holder, wetted material									
	4404	stainless steel, 1.4404 / 316L									
	HC22	Alloy C22, 2.4602									
	XXXX	special design									
		Descr.	Seals, wetted material								
		EPD	EPDM								
		FPM	FPM								
		FKM	FFKM								
		XXX	special design								
		Descr.	sensor								
		225	225mm PG 13.5 filled with gel								
		280	280mm PG 13.5 filled with liquid								
		XXX	special design								
			Descr.	Process connection							
	D32		flange DN32								
	D40		flange DN40								
	D50		flange DN50								
	A14		flange ANSI 1 1/4"								
	A12		flange ANSI 1 1/2"								
	A20		flange ANSI 2"								
	XXX		special design								
			Descr.	Cleaning port							
		G18	G 1/8" (female)								
		G14	G 1/4" (female)								
		N14	NPT 1/4" (female)								
XXX		special design									
	Descr.	Position reply									
	00	without									
	XX	special design									
EXTRACT 810M	-	-	-	-	-	-	-	-	Item number		

3.11 Order structure EXtract 811M

Retractable holder EXtract 811M						
	Descr.	Holder, wetted material				
	4404	stainless steel, 1.4404 / 316L				
	HC22	Alloy C22, 2.4602				
	XXXX	special design				
	Descr	Seals, wetted material				
	EPD	EPDM				
	FPM	FPM				
	FKM	FFKM				
	XXX	special design				
	Descr.	Sensor				
	325	325mm PG 13.5 filled with gel				
	380	380mm PG 13.5 filled with liquid				
	XXX	special design				
	Descr.	Process connection				
	D40	flange DN40				
	D50	flange DN50				
	A12	flange ANSI 1 1/2"				
	A20	flange ANSI 2"				
	N14	NPT M 1 1/4"				
	T20	Tri Clamp 2"				
	XXX	special design				
	Descr.	Cleaning port				
G18	G 1/8" (female)					
G14	G 1/4" (female)					
N14	NPT 1/4" (female)					
XXX	special design					
Descr.	Position reply					
00	without					
XX	special design					
EXTRACT 811M - - - - - Item number						

3.12 Order structure EXtract 815M

Retractable holder EXtract 815M						
	Desc.	Holder, wetted material				
	4404	stainless steel, 1.4404 / 316L				
	HC22	Alloy C22, 2.4602				
	XXXX	special design				
	Descr.	Seals, wetted material				
	EPD	EPDM				
	FPM	FPM				
	FKM	FFKM				
	XXX	special design				
	Descr.	Sensor				
	225	225mm PG 13,5 filled with gel				
	280	280mm PG 13,5 filled with liquid				
	XXX	special design				
	Descr.	Process connection				
	IN28	Ingold DN25 G1 ¼" O-Ring Pos. 28mm				
	IN50	Ingold DN25 G1 ¼" O-Ring Pos. 50mm				
	XXX	special design				
	Descr.	Cleaning port				
	G18	G 1/8" (female)				
	G14	G 1/4" (female)				
	N14	NPT 1/4" (female)				
XXX	special design					
Descr.	Position reply					
00	without					
XX	special design					
EXTRACT 815 M		-	-	-	-	Item number

3.13 Order structure EXtract 820M

Retractable holder EXTRACT 820M						
	Descr.	Holder, wetted material				
	PP	PP				
	PVDF	PVDF				
	PEEK	PEEK				
	XXXX	special design				
	Descr.	Seals, wetted material				
	EPD	EPDM				
	FPM	FPM				
	FKM	FFKM				
	XXX	special design				
	Descr.	sensor				
	225	225mm PG 13.5 filled with gel				
	280	280mm PG 13.5 filled with liquid				
	XXX	special design				
	Descr.	process connection				
	D50	flange DN50				
	A20	flange ANSI 2"				
	N14	NPT M 1 1/4"				
	XXX	special design				
	Descr.	cleaning port				
	G18	G 1/8" (female)				
	G14	G 1/4" (female)				
N14	NPT 1/4" (female)					
XXX	special design					

3.14 Order structure EXtract 821M

Retractable holder EXTRACT 821M						
	Descr.	Holder, wetted material				
	PVDF	PVDF				
	PEEK	PEEK				
	XXXX	special design				
	Descr	Seals, wetted material				
	EPD	EPDM				
	FPM	FPM				
	FKM	FFKM				
	XXX	special design				
	Descr.	Sensor				
	325	325mm PG 13.5 filled with gel				
	380	380mm PG 13.5 filled with liquid				
	XXX	special design				
	Descr.	Process connection				
	D50	flange DN50				
	A20	flange ANSI 2"				
	N14	NPT M 1 1/4"				
	XXX	special design				
	Descr.	Cleaning port				
G18	G 1/8" (female)					
G14	G 1/4" (female)					
N14	NPT 1/4" (female)					
XXX	special design					
Descr.	Position reply					
00	without					
XX	special design					
EXTRACT 821M		-	-	-	-	Item number

3.15 Order structure EXtract 825M

Retractable holder EXtract 825M						
	Code	Material (wetted parts)				
	PP	PP				
	PVDF	PVDF				
	PEEK	PEEK				
	XXXX	special version				
			Code	Sealing material (wetted sealings)		
			EPD	EPDM		
			FPM	FPM		
			FKM	FFKM		
			XXX	special version		
			Code	Sensor type		
			225	225mm PG 13,5 filled with gel		
			280	280mm PG 13,5 filled with liquid		
			XXX	special version		
			Code	Process connection		
			IN25	Ingold DN25 G1 ¼" O-ring Pos. 25mm		
			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			
		XX	special version			
EXtract 825 M		-	-	-	-	Order number

3.16 Order structure EXtract 830M

EXTRACT 830M retractable holder										
	Descr.	Holder, wetted material								
	4404	stainless steel, 1.4404 / 316L								
	XXXX	special design								
		Descr.	Seals, wetted material							
		EPD	EPDM FDA							
		FPM	FPM							
		XXX	special design							
		Descr.	sensor							
		225	225mm PG 13.5 filled with gel							
		280	280mm PG 13.5 filled with liquid							
		XXX	special design							
		Descr.	Process connection							
		IN28	Ingold DN25 (G1 1/4") O-Ring-Pos. 28mm							
		IH25	HyCIP® Ingold (G1¼") O-Ring Pos. 25mm							
		IH50	HyCIP® Ingold (G1¼") O-Ring Pos. 50mm							
		IH55	HyCIP® Ingold (G1¼") O-Ring Pos. 55mm							
		VARN	Varivent N DN40-125							
		TC15	TriClamp 1,5" (OD Ø50,5mm)							
		TC20	TriClamp 2" (OD Ø64mm)							
		BCT5	NEUMO BioControl 50							
		MV50	DIN 11851 DN50 (milk tube)							
		XXXX	Spezial design							
		Descr.	Cleaning port							
		G18	G 1/8" (female)							
		G14	G 1/4" (female)							
N14		NPT 1/4" (female)								
	XXX	special design								
	Descr.	Position reply								
	00	without								
	XX	special design								
EXTRACT 830M	-	-	-	-	-	-	-	-	Item number	

4 Spare parts and accessories

Seal kits		
EXTRACT	Part	Item number
810M / 820M	Seal kit EPDM	2-123-40-001
	Seal kit FPM	2-123-41-001
	Seal kit FFKM	2-123-42-001
811M / 821M	Seal kit EPDM	2-123-40-002
	Seal kit FPM	2-123-41-002
	Seal kit FFKM	2-123-42-002
815M / 825M	Seal kit EPDM	2-123-40-012
	Seal kit FPM	2-123-41-012
	Seal kit FFKM	2-123-42-012
830M IN28	Seal kit EPDM FDA	2-123-40-003
	Seal kit FPM	2-123-41-003
830M HyCiP®	Seal kit EPDM FDA	2-123-40-004
	Seal kit FPM	2-123-41-004
830M TC15/TC20 + MV50 VARN / BCT5	Seal kit EPDM FDA	2-123-40-005
	Seal kit FPM	2-123-41-005



Please state serial number of your holder when ordering parts and accessories.

Drive unit		
EXTRACT	Part	Item number
810M/811M / 815M/825M 820M/821M / 830M	Drive unit for sensor L = 225/325 mm	2-075-03-005
810M/811M / 815M/825M 820M/821M / 830M	Drive unit for sensor L = 280/380 mm	2-075-03-006
8XXM	Service tool PG13,5	2-140-10-001
8XXM	Unlocking device	2-140-26-001

Insertion rods		
EXTRACT	Part	Item 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



Please state serial number of your holder when ordering parts and accessories.

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