EXNER PROCESS EQUIPMENT



EXTRACT M

Manual retractable process holder Technical information All brand and product names are trademarks of the company EXNER PROCESS EQUIPMENT

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1 Product description

1.1 EXtract automatic retractable holder

Components

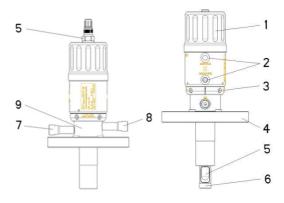


Figure 1: Retractable holder

- 1 Rotary handle
- 2 Interlocking bolt
- 3 Lower housing cramp
- 4 Process connection
- 5 Sensor
- 6 Insertion rod with protection cage
- 7 Cleaning port "IN"
- 8 Cleaning port "OUT"
- 9 Cleaning chamber

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

The EXtract 815M process holder is a manual operated retractable holder made of stainless steel 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.

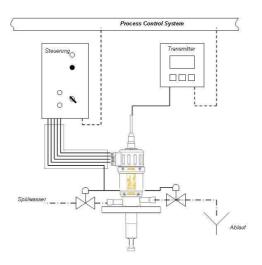


Figure 2: Process flow

Pressure Temperature

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

<u>!!!</u>

Observe pressure and temperature charts in chapter 8!

position

Installation 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 flown 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 6: Symbol

- Figure 5: Protection cage
- **A** Sensor maximally streamed
- **B** Sensor minimally streamed

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 cleaning pipes

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



Figure 8: Cleaning ports

- Cleaning port "IN"
- **B** Cleaning port "OUT"

How to install the cleaning pipes:

- 1. Install valve and dirt trap in the cleaning pipe for the cleaning liquid supply.
- 2. Attach supply cleaning pipe to the cleaning port "IN". .
- 3. Install valve in cleaning pipe for drainage of the cleaning liquid.
- 4. Attach cleaning pipe to the cleaning 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 cramp

3 Technical specifications

3.1 Standards

Pressure equipment directive

3.2 Material properties

Wetted components							
Holder	Holder						
EXTRACT	stainless ste	eel	plastic			seals	
810M	1.4404/316L	Alloy C22, 2.4602					
811M	1.4404/316L	Alloy C22, 2.4602				•	EPDM
815M	1.4404/316L	Alloy C22, 2.4602				•	FPM
820M			PVDF	PEEK	PP	•	FFKM
821M			PVDF	PEEK			
830M	1.4404/316L					•	EPDM FDA
						•	FPM

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

3.3 Cleaning ports

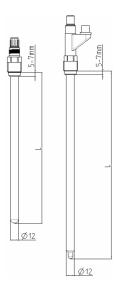
Thread	
without gland	• G ¹ / ₈ " (internal)
with gland	• G¼" (internal)
with gland	NPT ¼" (internal)

Cleaning pressure	
	1 - 4 bar

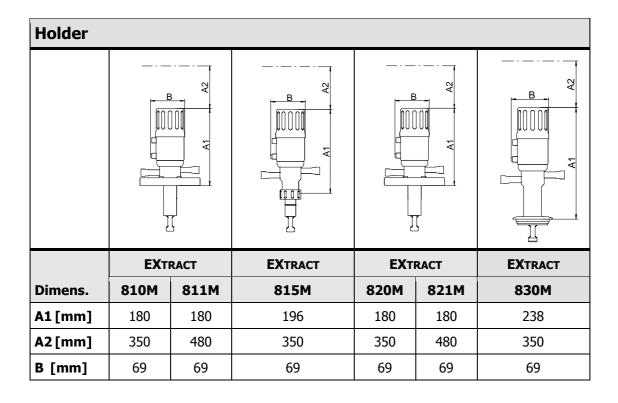
3.4 Sensors

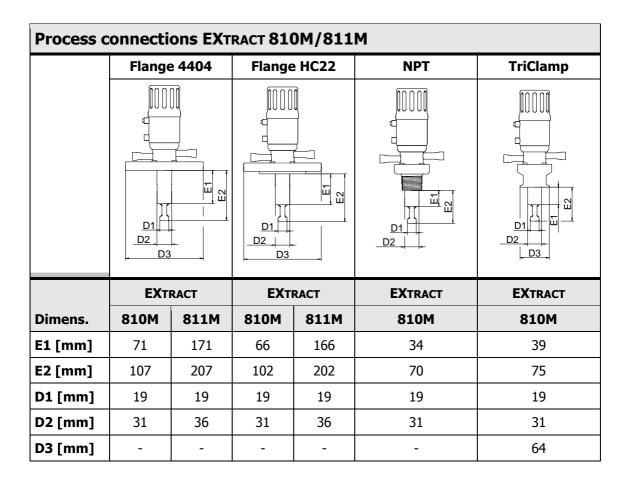
Gel filled sensor						
EXTRACT	l [mm]	d [mm]	PG			
810M / 820M	225	12	13.5			
811M / 821M	325	12	13.5			
815M	225	12	13,5			
830M	225	12	13,5			

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	280	12	13,5			
830M	280	12	13,5			



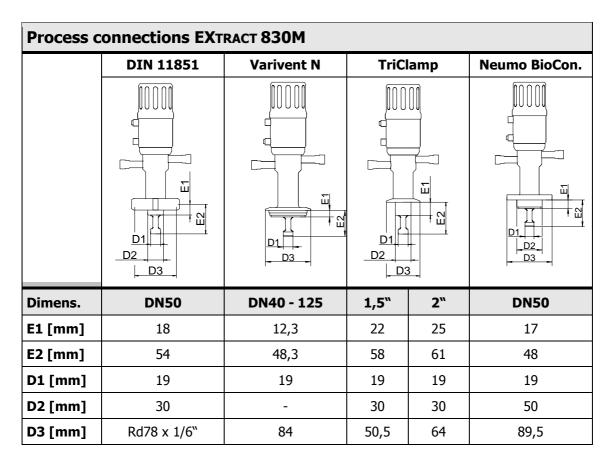
3.5 Dimensions





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

Process connections EXTRACT 820M/821M							
	Fla	nge	NPT				
	D1 D2						
	ЕХт	RACT	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 o	onnections EXT	RACT 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 ¼"	G 1 ¼"	G 1 ¼"	G 1 ¼"

3.6 Ambient conditions

Ambient temperature - 10 - 70 °C

Transport and storage temperature - 20 - 80 °C

3.7 Process conditions EXTRACT 810M/811M/815M/830M

max. allowed pressure PS: 16 bar max. allowed temperature TS: 140 °C

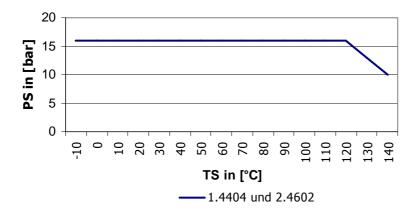


Fig. 1: Pressure temperature diagram EXTRACT 810M/811M 815M/830M

3.8 Process conditions EXTRACT 820M/821M

max. allowed pressure PS 10 bar max. allowed temperature TS 140 °C

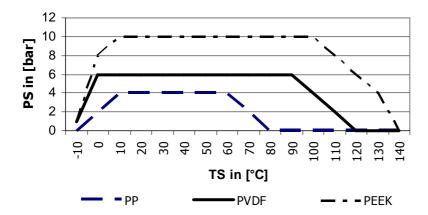


Fig. 2: Pressure temperature diagram EXTRACT 820M/821M

3.9 Ordering structure EXTRACT 810M

Retractable h	noldei	EXtract	810M				
[Descr.	Holder, w	etted ma	terial			
2	1404	stainless st	teel, 1.440 ²	1 / 316L			
l F	HC22	Alloy C22,	2.4602				
\ \ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	(XXX	special des	sign				
		Descr.	Seals, we	etted mate	erial		
		EPD	EPDM				
		FPM	FPM				
		FKM	FFKM				
		XXX	special des	sign			
				sensor			
			225		G 13.5 filled		
			280	280mm P0	G 13.5 filled	d with liquic	
			XXX	special de	sign		
						connectio	n
				D32	flange DN		
				D40	flange DN		
				D50	flange DN		
				A14	flange AN		
				A12	flange AN		
				A20	flange AN		
				XXX	special de	sign	
					_		
						Cleaning	
					G18 G14	G 1/8" (fe	
					N14	NPT 1/4"	
					XXX	special de	
					***	special de	Sigii
						Dagge	Desition vanle
						Descr.	Position reply without
						00	
						XX	special design
EXTRACT 810M		-	-	-	-	-	Item number

3.10 Ordering structure EXTRACT 811M

Descr.	Holder, v	wetted mat	terial		
4404		steel, 1.4404			
HC22	Alloy C22		. , 0 = 0 =		
XXXX	special de				
	Descr	Seals, we	tted mate	rial	
	EPD	EPDM			
	FPM	FPM			
	FKM	FFKM			
	XXX	special des	ign		
		-			
		Descr.	Sensor		
		325	325mm PC	3 13.5 filled v	with gel
		380	380mm PC	3 13.5 filled v	vith liquid
		XXX	special des	sign	
			Descr.	Process co	onnection
			D40	flange DN4	
			D50	flange DN5	
			A12	flange ANS	
			A20	flange ANS	
			N14	NPT M 1 1/	
			T20	Tri Clamp 2	
			XXX	special desi	ign
				Dagge	Classics new
				Descr. G18	Cleaning port 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
					Special design

3.11 Ordering structure EXTRACT 815M

Retractable hole	der EXtra	ct 815M				
Desc.	Holder, we	etted mat	erial			
4404	stainless sta	eel, 1.4404	/ 316L			
HC22	Alloy C22, 2	2.4602				
XXXX	special desi	gn				
	_					
	Descr.	Seals, we	etted mate	erial		
	EPD	EPDM				
	FPM	FPM				
	FKM	FFKM				
	XXX	special de	sign			
		Descr.	Sensor			
		225	225mm P0	3,5 filled	with gel	
		280	280mm P0	3 13,5 filled	with liquid	
		XXX	special des	sign		
				Process of		
			IN28	Ingold DN		
			TNIEG	O-Ring Pos		
			IN50	Ingold DNZ O-Ring Pos		
			VVV			
			XXX	special des	sign	
				Decer	Classing	wa wh
				Descr. G18	Cleaning G 1/8" (fee	
				G16	G 1/8" (fe	
				N14	NPT 1/4"	
				XXX	special des	
				7000	Special ac.	ngn
					Descr	Position reply
						without
					XX	special design
						special design
EXTRACT 815 M	-	-	-	-	-	Item number

3.12 Ordering structure EXTRACT 820M

Descr	Holder, w	vetted mat	erial			
PP	PP P	retted mat	-Ci iui			
PVDF	PVDF					
PEEK	PEEK					
XXXX	special des	sian				
		<u>- J</u>				
	Descr.	Seals, we	tted mate	rial		
	EPD	EPDM				
	FPM	FPM				
	FKM	FFKM				
	XXX	special des	sign			
		Descr.	sensor			
		225	225mm P0	3.5 filled	with gel	
		280	280mm P0	3.5 filled	with liquid	
		XXX	special des	sign		
			Descr.	process o	onnection	
			D50	flange DN!	50	
			A20	flange ANS		
			N14	NPT M 1 1	/4"	
			XXX	special des	sign	
				Descr.	cleaning	port
				G18	G 1/8" (fe	
				G14	G 1/4" (fe	
				N14	NPT 1/4"	(female)
				XXX	special de	sign
						position reply
					00	without
					XX	special design
EXTRACT 820M	-	-	-	-	-	Item number

3.13 Ordering structure EXTRACT 821M

Descr.	Holder, v	vetted mat	terial			
PVDF	PVDF					
PEEK	PEEK					
XXXX	special des	sign				
	Descr	Seals, we	etted mate	rial		
	EPD	EPDM				
	FPM	FPM				
	FKM	FFKM				
	XXX	special des	sign			
			_			
		Descr.	Sensor			
		325		3 13.5 filled	with gel	
		380		3 13.5 filled		
		XXX	special de		·	
				<u>. J</u>		
			Descr.	Process of	connection	
			D50	flange DN		
			A20	flange ANS		
			N14	NPT M 1 1		
			XXX	special des	•	
				Descr.	Cleaning	port
				G18	G 1/8" (fe	
				G14	G 1/4" (fe	
				N14	NPT 1/4"	
				XXX	special des	
						-
					Descr.	Position reply
					00	without
					XX	special design
						openia and gr

3.14 Ordering structure EXTRACT 830M

EXTRACT 830	OM retr	actable	holder				
	Descr.	Holder, v	vetted mat	terial			
	4404	stainless s	steel, 1.4404	1 / 316L			
	XXXX	special de	sign				
		_					
		Descr.	Seals, we	etted mater	rial		
		EPD	EPDM FDA	1			
		FPM	FPM				
		XXX	special des	sign			
			_				
			Descr.	sensor			
			225		3 13.5 filled		
			280		3 13.5 filled	with liquid	
			XXX	special des	sign		
					Process of		
				IN28			") O-Ring-Pos. 28mm
				IH25			") O-Ring Pos. 25mm
				IH50			") O-Ring Pos. 50mm
				IH55			") O-Ring Pos. 55mm
				VARN		DN40-125	
				TC15		1,5" (OD Ø	
				TC20		2" (OD Ø64 oControl 50	
				BCT5			
				MV50 XXXX	1	L DN50 (mi	ik tube)
				****	Spezial de	Sigii	
					Dogge	Classina	mant.
					G18	G 1/8" (fe	
					G14	G 1/6" (fe	
					N14	NPT 1/4"	
					XXX	special de	
					XXX	special de	Sigii
						Descr.	Position reply
						00	without
						XX	special design
						///	Special acaign
EXTRACT 830M		-	-	-	-	-	Item number

4 Parts and accessories

Seal kits	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	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	Seal kit EPDM FDA	2-123-40-005				
VARN / BCT5	Seal kit FPM	2-123-41-005				

!!!

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

Drive unit with pneumatic position reply						
EXTRACT	Part	Item number				
810M/811M / 815M 820M/821M / 830M	Drive unit for sensor L = 225/325 mm	2-075-03-005				
810M/811M / 815M 820M/821M / 830M	Drive unit for sensor L = 280/380 mm	2-075-03-006				

!!!

Drive units are available for order only in conjunction with an insertion rod!

Insertion rods	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				
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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