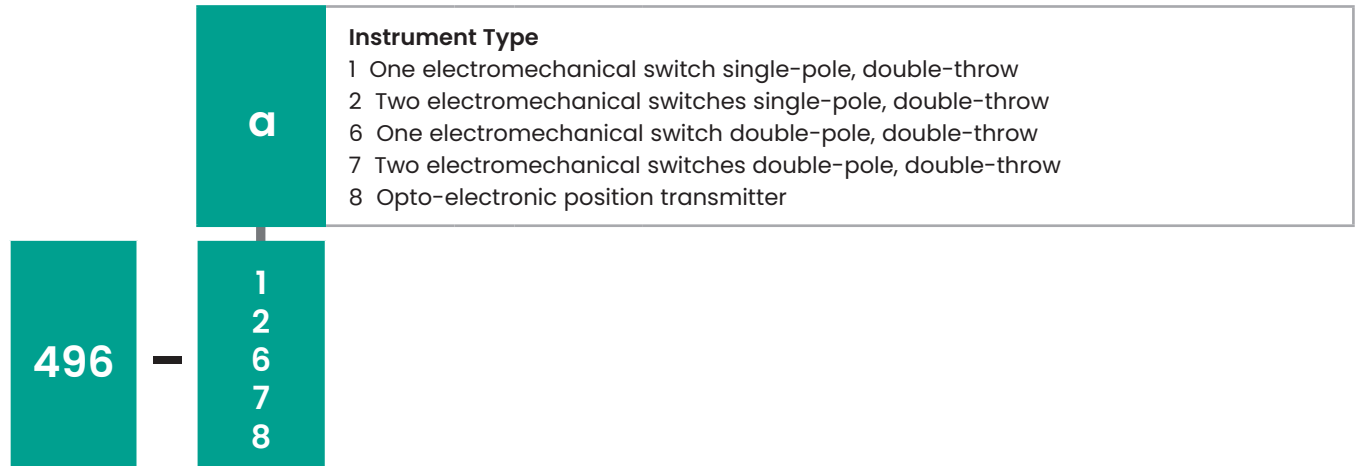


Numbering System

CA/US design

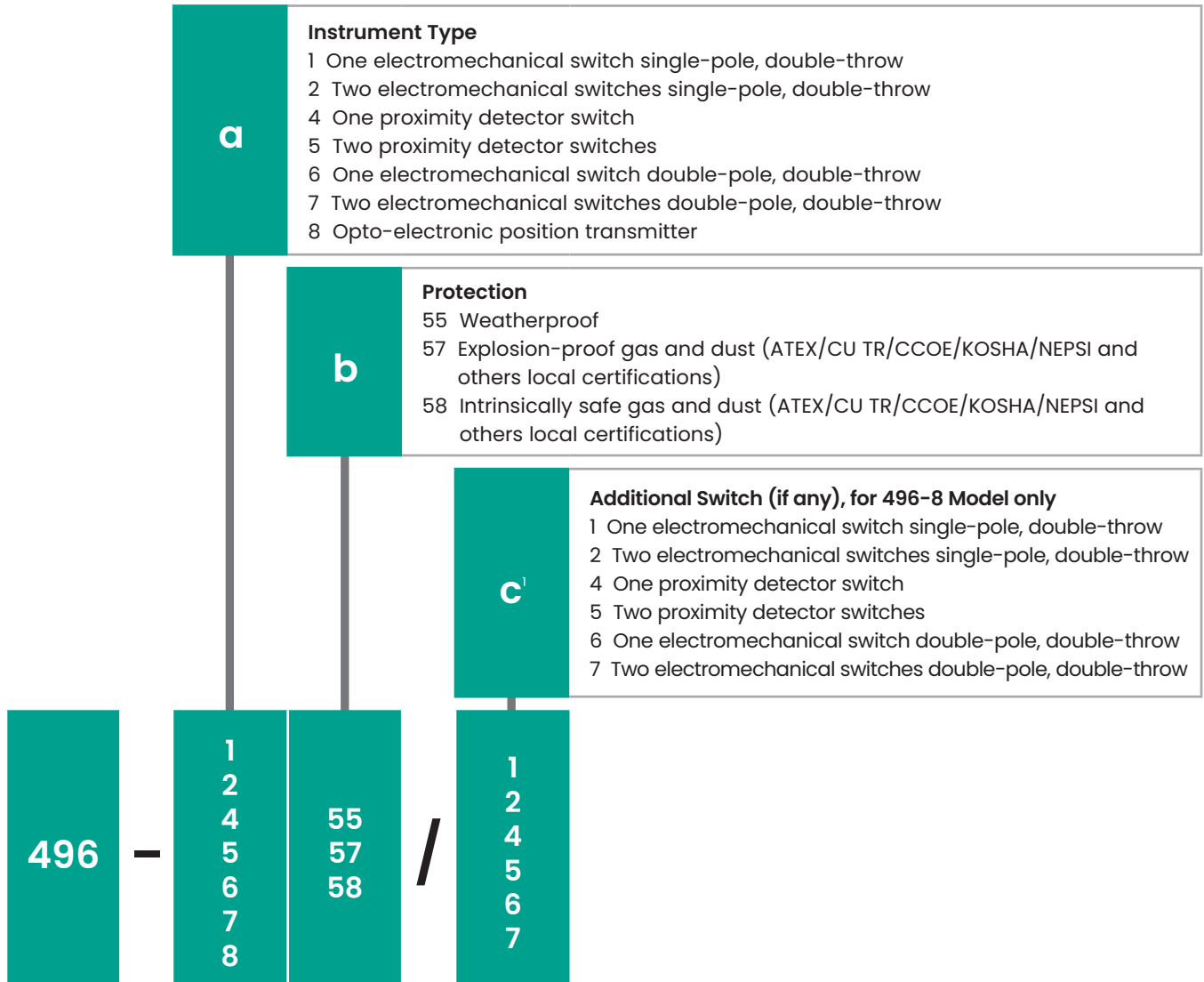
Series Identification 496-a



Numbering System

European design

Series Identification 496-ab/c



General note:
Among the numerous combinations mentioned above, some may not be available or have a level of protection conforming to all the standards. Consult Baker Hughes for confirmation.

1. This single digit, together with the slash before is only used in the case of transmitters provided with additional on-off indication.

In order to limit the list of model references, 496-x is used throughout the document.

For complete model description, refer to 496 ATEX and US Canada safety Instruction manuals, and other local certifications manuals.

Electromechanical Switches 496-1 and 496-2 496-6 and 496-7

Material

Body and cover: Aluminum with anti-corrosion treatment, epoxy or polyurethane painted.

Option: 316L type Stainless Steel with passivation.

Shaft: stainless steel.

O-ring seals: Buna® N.

No part made of copper or copper bearing alloy is exposed to the atmosphere.

Stroke

Maximum rotary travel: 90°

Linear travel: 12 mm to 102 mm (1/2" – 4") through a linkage. Rotary or linear travel to be specified when ordering separate instruments.

Electrical Data

Microswitches: single pole, double throw, silver plated contacts, individually actuated by an adjustable cam. One, two or four microswitches can be used.

Ratings: Suitable for explosionproof and weatherproof models only.

Circuit type	Voltage	Current
Resistive load	110/125 VDC	0.24 A
	220 VDC	
	24/30 VDC	1.2 A
	48 VDC	1 A
	115 VAC	
	250 VDC	3 A
	125 VDC	10 A
	28 VDC	25 A
Inductive load	110/125 VDC	0.018 A
	220 VDC	
	24/30 VDC	0.6 A
	48 VDC	0.5 A
	115 VAC	1 A
	28 VDC	10 A
	125 VAC	
	250 VAC	
	480 VAC	
	250 VAC	
Motor (US model only)	28 VDC	5 A
Lamp (US model only)	28 VDC	3 A

Connections: 3/4" NPT

Other connection types allowed using adaptors or reducers.

In case of separate cables requested with additional functions, a 3 outputs cable output type Y237 is available.

Ratings

Temperature range: -55°C to +85°C (-67°F to +185°F), upon the type of switch. The range can be limited for used in explosible areas.

Enclosure Rating: IP 66 / IP 67 according to EN 60529

Approvals

ATEX Approvals (2014/34/EU Directive)

Explosionproof:

II 2 GD

- Ex db IIC T(*) Gb
- Ex tb IIIC T(*) Db IP66/67

(*) T6 or T85°C for ambient temperature up to +70°C, T5 or T100°C for ambient temperature up to +85°C depending internal detector type. See 496 ATEX Instruction Manual.

Intrinsic Safety:

Suitable for 496-1 and 496-2 models only

II 1 GD or II 1G or II 1D or II 2 G

- Ex ia IIC T(**) Ga or Ex ia IIC T(**) Gb
- Ex ia IIIC T(***) Da
- T.amb: (****)

(**) T6 or T5 or T4

(***) T₂₀₀85°C or T₂₀₀100°C or T₂₀₀135°C Da

(****) Depending on the nature of elements mounted inside the housing and the temperature classes, the ambient temperature range shall be reduced without exceeding the lower or upper ambient temperature limits allowed. See 496 ATEX Instruction Manual.

US and Canadian Approvals (UL / CAN/CSA)

Intrinsic Safety:

- Class I, Zone 0 AEx ia IIC T6...T4 Ga
- Ex ia IIC T6...T4 Ga
- Class I, Division 1, Groups A, B, C, D
- Zone 20 AEx ia IIIC T₂₀₀85°C or T₂₀₀100°C or T₂₀₀135°C Da
- Ex ia IIIC T₂₀₀85°C or T₂₀₀100°C or T₂₀₀135°C Da
- Class II, Division 1, Groups E, F, G

Flameproof and Dust Ignition:

- Class I, Zone 1 AEx db IIC T6 or T5 Gb
- Ex db IIC T6 or T5 Gb
- Class I, Division 2, Groups A, B, C, D
- Zone 21 AEx tb IIIC T85°C or T100°C Db
- Ex tb IIIC T85°C or T100°C Db
- Class II, Division 2, Groups F, G

Ambient temperature range depends on the nature of the elements mounted inside the housing. See 496 US-Canada Instruction Manual.

Others Local approvals available

Please consult Baker Hughes

Performance

Differential gap (percent of full scale):

Rotary valves: 1.5 percent

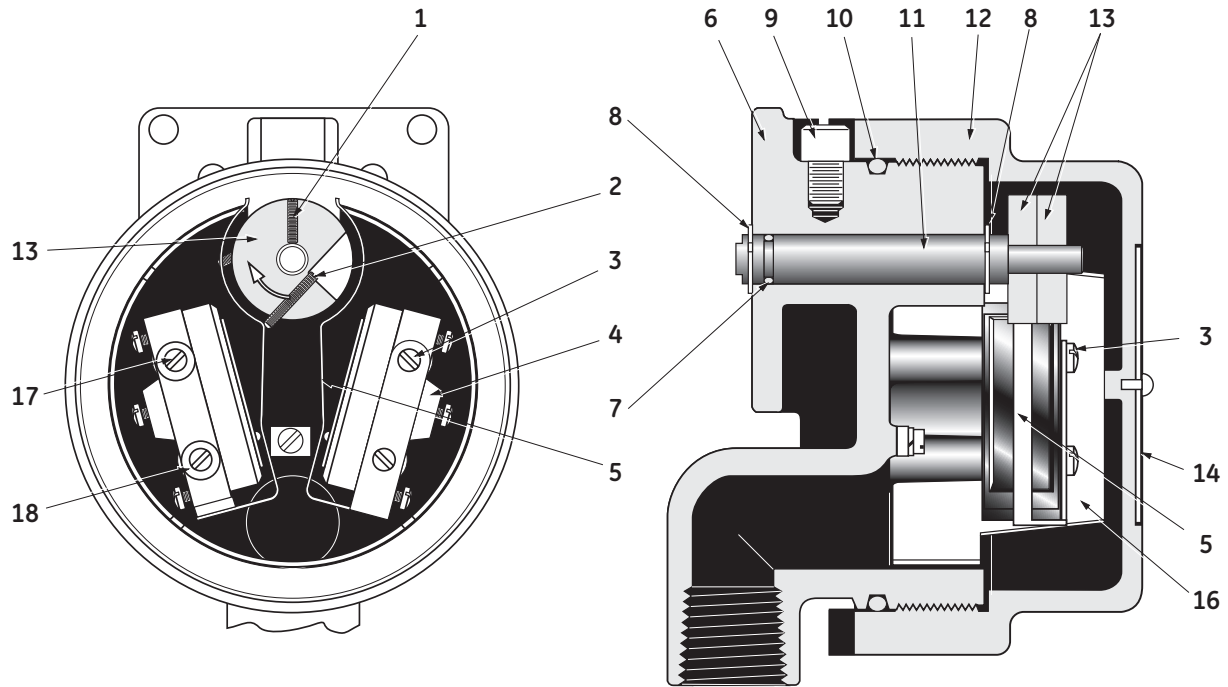
Linear motion valves:

Travel	Differential gap
12 mm (1/2")	4 percent
25 mm (1")	3 percent
50 mm (2")	1.5 percent
100 mm (4")	1.5 percent

Repeatability: 0.2 percent

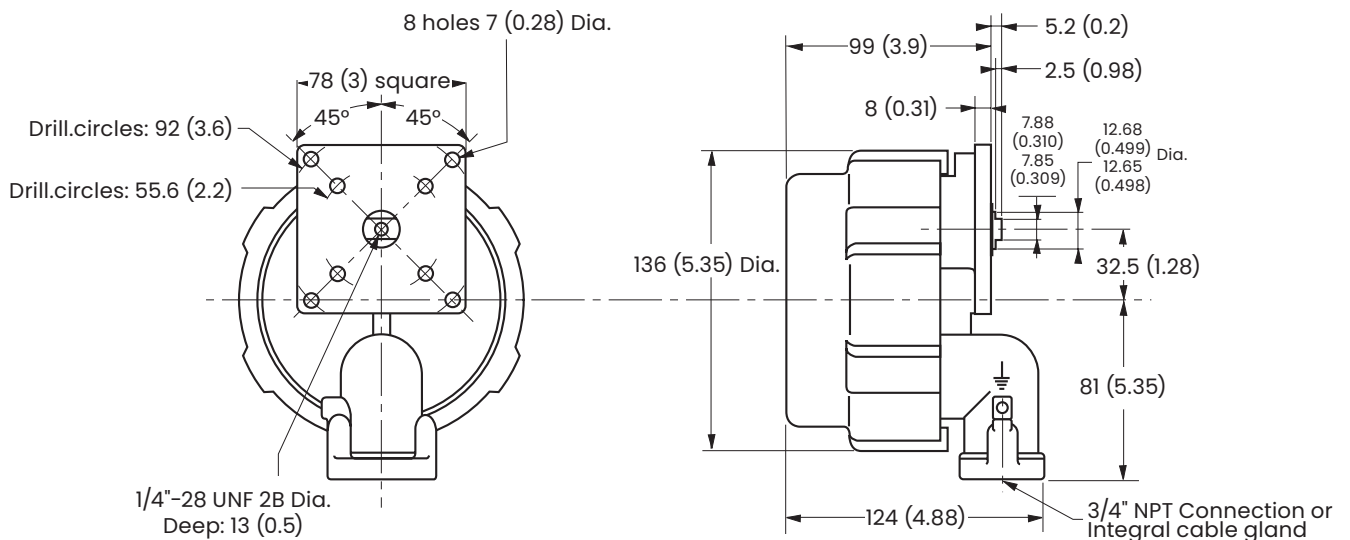
Electromechanical Switches 496-1 and 496-2 496-6 and 496-7

Part Reference



Ref. N°.	Part Name	Ref. N°.	Part Name	Ref. N°.	Part Name	Ref. N°.	Part Name
1	Grub screw	6	Housing	11	Shaft	17	Fixing screw
2	Adjusting screw	7	O-Ring	12	Cover	18	Washer
3	Fixing screw	8	Circlip	13	Cam		
4	Microswitch	9	Security screw	14	Serial plate		
5	Lever	10	O-Ring	16	Insulator		

Dimensions - mm (inches)



Material

Body and cover: Aluminum with anti-corrosion treatment, epoxy or polyurethane painted.

Option: 316L type stainless steel with passivation.

Shaft: stainless steel.

O-ring seals: Buna® N.

No part made of copper or copper bearing alloy is exposed to the atmosphere.

Stroke

Maximum rotary travel: 90°

Linear travel: 25 mm to 102 mm (1" – 4") through a linkage. Rotary or linear travel to be specified when ordering separate instruments.

Ratings

Temperature range: upon the type of switch and the approval used.

Enclosure Rating: IP 66 / IP 67 according to EN 60529

Approvals

ATEX Approvals (2014/34/EU Directive)

Explosionproof:

II 2 GD

- Ex db IIC T(*) Gb
- Ex tb IIIC T(*) Db IP66/67

(*) T6 or T85°C for ambient temperature up to +70°C, T5 or T100°C for ambient temperature up to +85°C. depending internal detector type. See 496 ATEX Instruction Manual.

Intrinsic Safety:

II 1 GD or II 1G or II 1D or II 2 G

- Ex ia IIC T(**) Ga or Ex ia IIC T(**) Gb
- Ex ia IIIC T(***) Da
- T.amb: (****)

(**) T6 or T5 or T4

(***) T₂₀₀85°C or T₂₀₀100°C or T₂₀₀135°C Da

(****) Depending on the nature of elements mounted inside the housing and the temperature classes, the ambient temperature range shall be reduced without exceeding the lower or upper ambient temperature limits allowed. See 496 ATEX Instruction Manual.

US and Canadian Approvals (UL / CAN/CSA)

Intrinsic Safety:

- Class I, Zone 0 AEx ia IIC T6...T4 Ga
- Ex ia IIC T6...T4 Ga
- Class I, Division 1, Groups A, B, C, D
- Zone 20 AEx ia IIIC T₂₀₀85°C or T₂₀₀100°C or T₂₀₀135°C Da
- Ex ia IIIC T₂₀₀85°C or T₂₀₀100°C or T₂₀₀135°C Da
- Class II, Division 1, Groups E, F, G

Flameproof and Dust Ignition:

- Class I, Zone 1 AEx db IIC T6 or T5 Gb
- Ex db IIC T6 or T5 Gb
- Class I, Division 2, Groups A, B, C, D
- Zone 21 AEx tb IIIC T85°C or T100°C Db
- Ex tb IIIC T85°C or T100°C Db
- Class II, Division 2, Groups F, G

Ambient temperature range depends on the nature of the elements mounted inside the housing. See 496 US-Canada Instruction Manual.

Others Local approvals available

Please consult Baker Hughes.

Electrical Data

Detector: By flux variation actuating a power relay located outside the hazardous area, by means of an oscillator and an amplifier.

One or two detectors can be used.

Ratings: Determined by the power relay selected, not supplied with the device.

Connections: 3/4" NPT

Other connection types allowed using adaptors or reducers. In case of separate cables requested by additional functions, a 3 outputs cable output type Y237 is available.

Performance

Differential gap (percent of full scale):

Rotary valves: 1.5 percent

Linear motion valves:

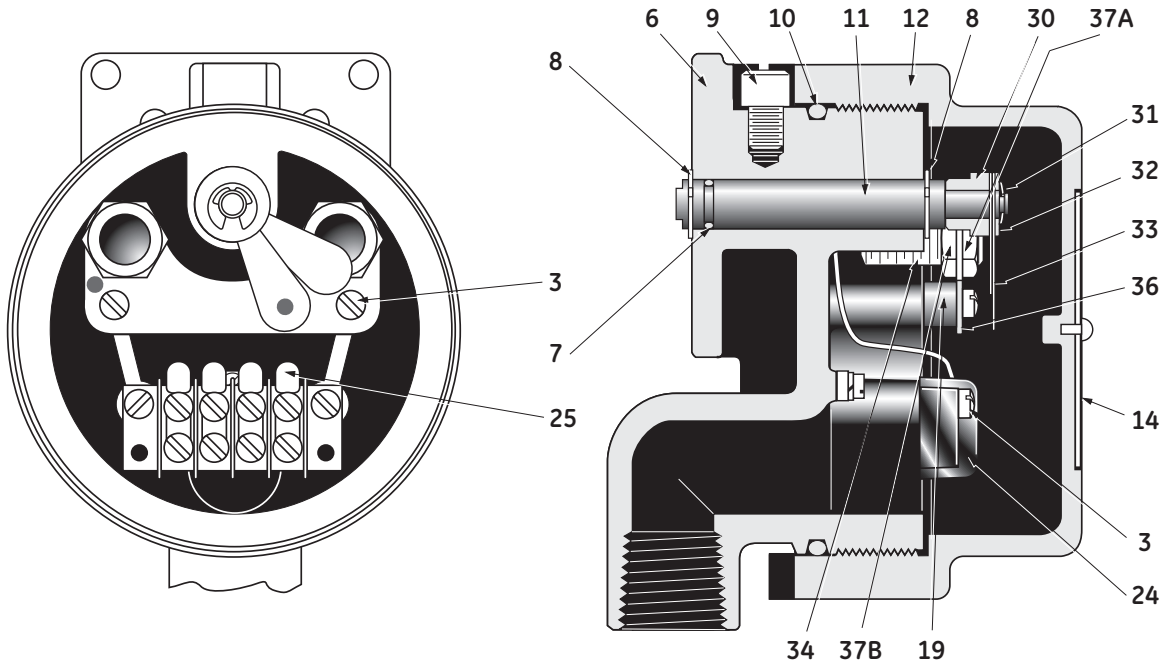
Travel	Differential gap
25 mm (1")	3 percent
50 mm (2")	1.5 percent
100 mm (4")	1.5 percent

Repeatability: 0.3 percent

Proximity Switches

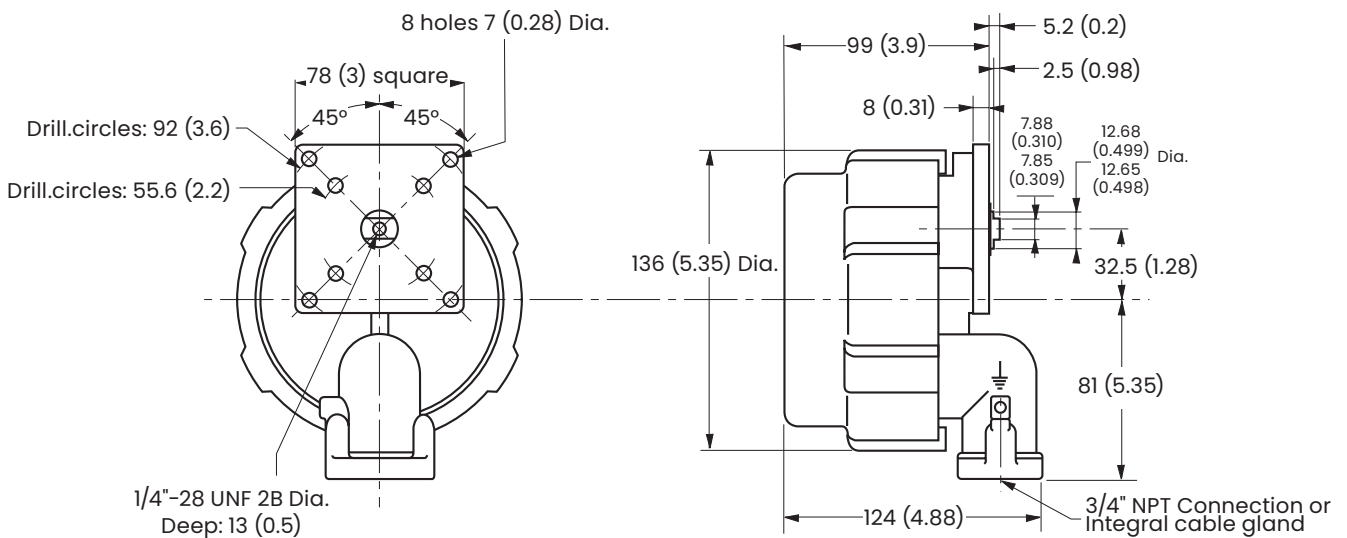
496-4 and 496-5

Part Reference



Ref. N°.	Part Name	Ref. N°.	Part Name	Ref. N°.	Part Name	Ref. N°.	Part Name
3	Fixing screw	11	Shaft	29	Circlip	36	Detector bracket
6	Housing	12	Cover	30	Spacer		
7	O-Ring	14	Serial plate	31	Circlip		
8	Circlip	19	Spacer	32	Washer		
9	Security screw	24	Terminal strip	33	Arm		
10	O-Ring	25	Connections	34	Detector		

Dimensions - mm (inches)



Material

Body and cover: Aluminum with anti-corrosion treatment, epoxy or polyurethane painted.

Option: 316L type stainless steel with passivation.

Shaft: stainless steel.

O-ring seals: Buna® N.

No part made of copper or copper bearing alloy is exposed to the atmosphere.

Stroke

Rotary travel: 25° to 90°

Linear travel: 12 mm to 102 mm (1/2" – 4") through a linkage. Rotary or linear travel to be specified when ordering separate instruments.

Direction of rotation: clockwise or counterclockwise.

Ratings

Temperature range: -40°C to +80°C (-40°F to +176°F). The range can be limited for used in explosible areas.

Enclosure Rating: IP 66 / IP 67 according to EN 60529

Approvals

ATEX Approvals (2014/34/EU Directive)

Explosionproof:

II 2 GD

- Ex db IIC T(*) Gb
- Ex tb IIIC T(*) Db IP66/67

(*) T6 or T85°C for ambient temperature up to +70°C, T5 or T100°C for ambient temperature up to +85°C, depending internal detector type. See 496 ATEX Instruction Manual.

Intrinsic Safety:

II 1 GD or II 1G or II 1D or II 2 G

- Ex ia IIC T(**) Ga or Ex ia IIC T(**) Gb
- Ex ia IIIC T(***) Da
- T.amb: (****)

(**) T6 or T5 or T4

(***) T₂₀₀85°C or T₂₀₀100°C or T₂₀₀135°C Da

(****) Depending on the nature of elements mounted inside the housing and the temperature classes, the ambient temperature range shall be reduced without exceeding the lower or upper ambient temperature limits allowed: see ATEX Instruction Manual.

US and Canadian Approvals (UL / CAN/CSA)

Intrinsic Safety:

- Class I, Zone 0 AEx ia IIC T6...T4 Ga
- Ex ia IIC T6...T4 Ga
- Class I, Division 1, Groups A, B, C, D
- Zone 20 AEx ia IIIC T₂₀₀85°C or T₂₀₀100°C or T₂₀₀135°C Da
- Ex ia IIIC T₂₀₀85°C or T₂₀₀100°C or T₂₀₀135°C Da
- Class II, Division 1, Groups E, F, G

Flameproof and Dust Ignition:

- Class I, Zone 1 AEx db IIC T6 or T5 Gb
- Ex db IIC T6 or T5 Gb
- Class I, Division 2, Groups A, B, C, D
- Zone 21 AEx tb IIIC T85°C or T100°C Db
- Ex tb IIIC T85°C or T100°C Db
- Class II, Division 2, Groups F, G

Ambient temperature range depends on the nature of the elements mounted inside the housing. See 496 US-Canada Instruction Manual.

Others Local approvals available

Please consult Baker Hughes.

Performance

Linearity:

- ≤ 0.5 percent (rotary angle from 25° to 60°)
- ≤ 0.3 percent (rotary angle from 60° to 90°)

Hysteresis: ≤ 0.1 percent

Dead band: ≤ 0.1 percent

Repeatability: ≤ 0.1 percent

Accuracy: ≤ 0.5 percent

Accessories

The body can optionally be equipped either with one or two micro-switches or with one or two proximity detectors as described on pages 2 and 3.

Electrical Data

2-wire instrument

Output signal: 4-20 mA

Supply voltage: 9 to 36 VDC (explosion-proof)
9 to 28 VDC (intrinsic safety)

Maximum load impedance:

1350 Ω for supply under 36 V

950 Ω for supply under 28 V

Zero and span settings:

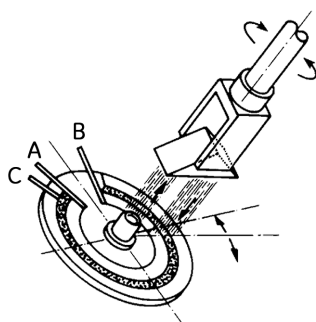
By auxiliary internal potentiometers.

Connections: 3/4" NPT

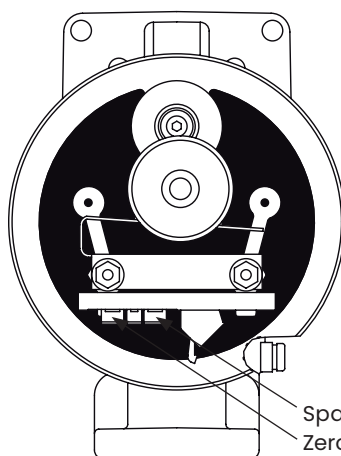
Other connection types allowed using adaptors or reducers.

In case of separate cables requested by additional functions, a 3 outputs cable output type Y237 is available.

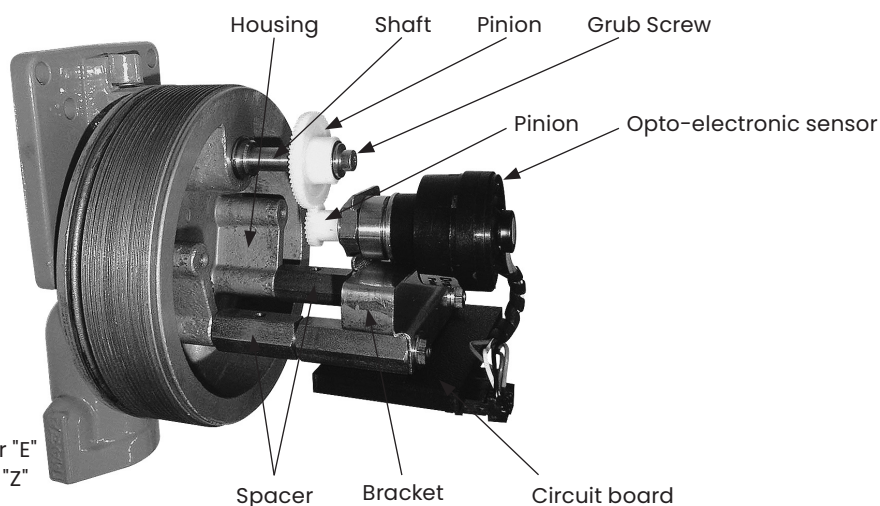
Operational Diagram



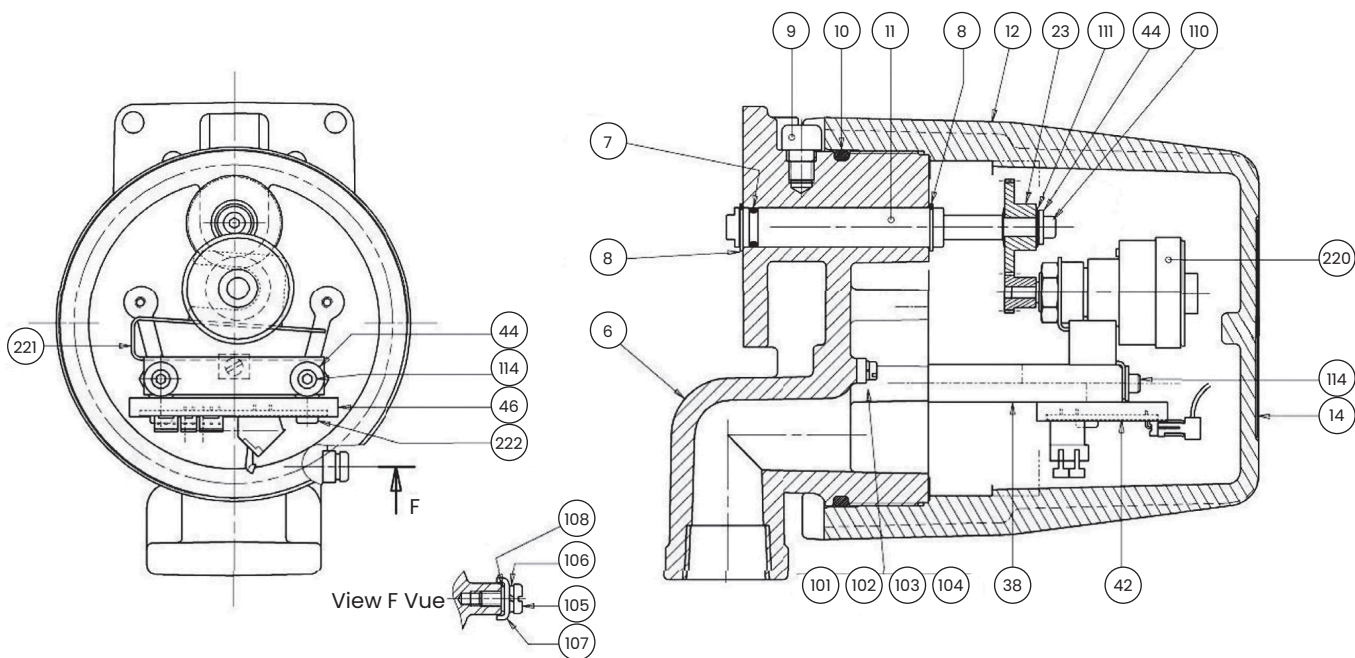
A prism, mechanically driven by the valve plug, follows the plug displacement through a system of gears and (for a reciprocating valve) a linkage. A light beam, emitted by a LED, which is fixed to the housing, is reflected by the prism and impacts on a stationary disc. This disc is equipped with three tracks. One is resistive, another conductive, and in between is a photo-sensitive track. The light beam reflected onto the photo-sensitive track creates a bridge between the other two tracks and serves as a potentiometer slide by modulating the voltage at the point C for a supply voltage V_A-V_B . The variable voltage thus generated V_A-V_C is converted electronically to give a 4-20 mA signal. This type of detector is frictionless, non-sparking- and free from electrical noise. It is inherently intrinsically safe, insensitive to vibrations- and has an unequalled life span.



Span Potentiometer "E"
Zero Potentiometer "Z"

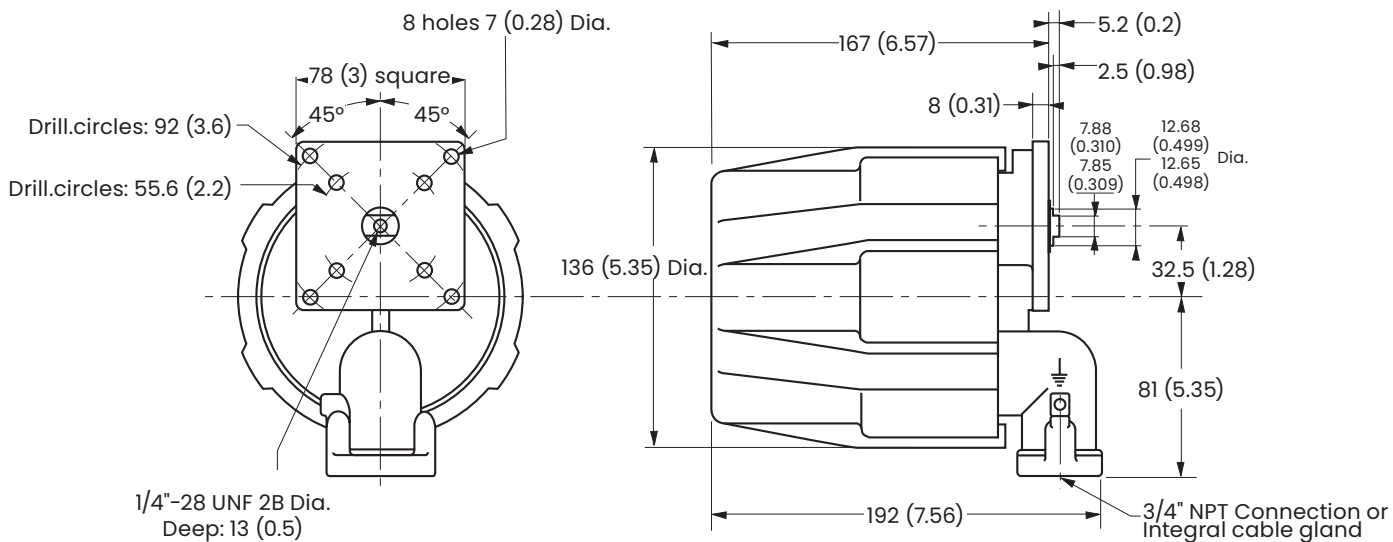


Part Reference



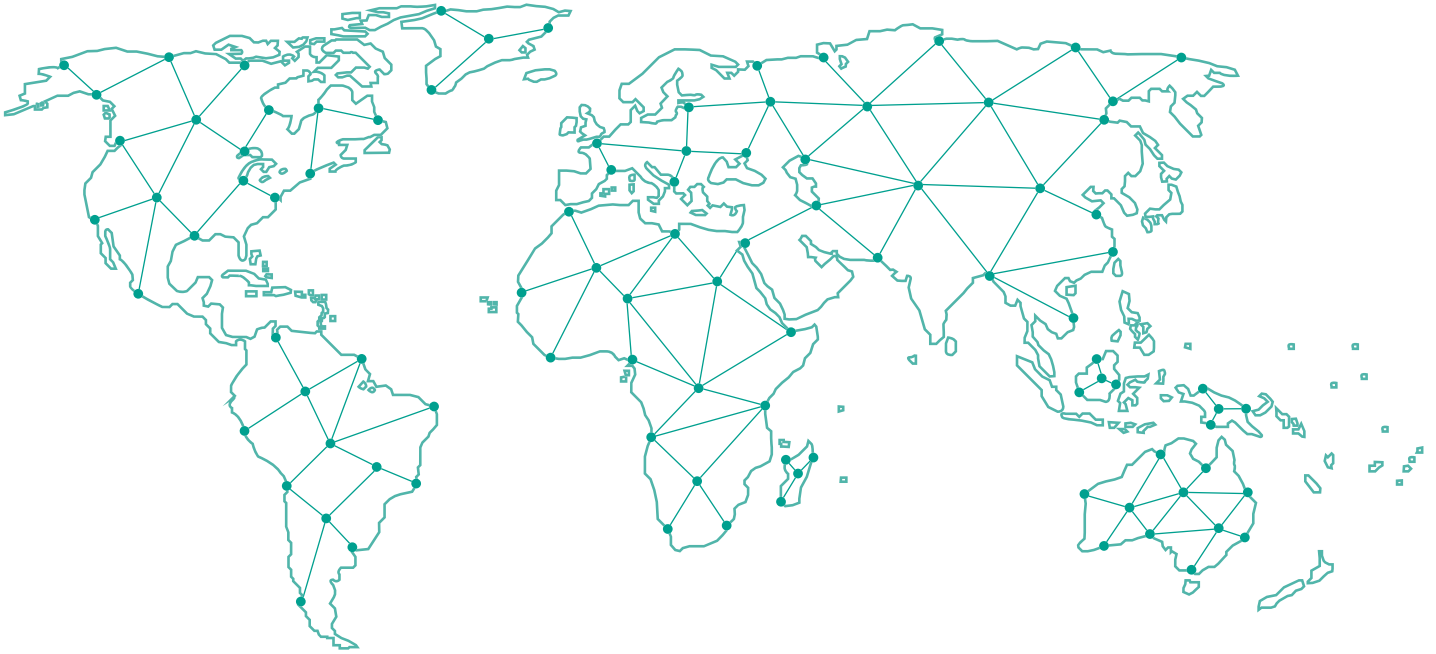
Rep.	Designation	Rep.	Designation	Rep.	Designation
6	housing	38	spacer	106	Grower washer
7	O-ring	42	electronic card	107	stirrup
8	circlips	44	washer	108	washer
9	CHC screw	46	card support	110	screw
10	O-ring	101	ground screw (inside)	111	spring washer
11	shaft	102	Grower washer	114	CHC screw
12	cover	103	stirrup	220	detector set
14	serial plate	104	washer	221	detector support
23	pinion	105	ground screw (outside)	222	screw

Dimensions - mm (inches)



Find the nearest local Channel Partner in your area:

valves.bakerhughes.com/contact-us



Tech Field Support and Warranty:

Phone: +1-866-827-5378

valvesupport@bakerhughes.com

valves.bakerhughes.com

Copyright 2025 Baker Hughes Company. All rights reserved. Baker Hughes provides this information on an "as is" basis for general information purposes. Baker Hughes does not make any representation as to the accuracy or completeness of the information and makes no warranties of any kind, specific, implied or oral, to the fullest extent permissible by law, including those of merchantability and fitness for a particular purpose or use. Baker Hughes hereby disclaims any and all liability for any direct, indirect, consequential or special damages, claims for lost profits, or third party claims arising from the use of the information, whether a claim is asserted in contract, tort, or otherwise. Baker Hughes reserves the right to make changes in specifications and features shown herein, or discontinue the product described at any time without notice or obligation. Contact your Baker Hughes representative for the most current information. The Baker Hughes logo and Masonellan are trademarks of Baker Hughes Company. Other company names and product names used in this document are the registered trademarks or trademarks of their respective owners.

Baker Hughes 

bakerhughes.com