

# ASCO™ Signaling Box

With mechanical or inductive contacts , for series 298 and 398 valves

Series  
**890**

## Features and Benefits

- The signaling box gives electrical feedback of the valve closed and open position
- The signaling box is supplied pre-installed and pre-adjusted on the valve. It can be delivered separately for on-site installation on any valve already in service
- The version with mechanical contacts can be used in magnetic field environments
- The signaling box can be used outdoors thanks to its UV resistance and degree of protection (IP66)
- Specifications are laser marked
- Design allows setting of position of the signaling box through 360°

## Operation

At both end-of-travel positions (open and closed) of the valve stem, cams on the signaling box plunger operate contacts which provide an electrical signal indicating that the end position is reached.

## General

### Ambient temperature range

Mechanical contacts -20°C to +80°C (-4°F to 176°F)  
Inductive contacts (PNP/NPN) -20°C to +70°C (-4°F to 158°F)

### Degree of protection

IP66 (EN 60529)

## Construction

Body	Glass fiber filled PA
Cover	Aluminium with sulphuric acid anodising treatment
Valve adaptor	Stainless steel
Stem and cams	Stainless steel and PEEK
Guiding and bearing	POM
Seals	NBR
Interface gasket	NBR
Cable gland	PA + NBR

## Electrical characteristics

Function	ON-OFF	ON-OFF
Contact type	Mechanical contacts	Inductive contacts (PNP/NPN)
Voltage rating	24 V AC/DC	10 to 30 V DC
Wattage rating max.	-	0.95 W
Breaking capacity	0.5 A / max. 1 A	100 mA

### Electrical connection

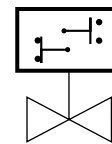
1 terminal block with 4 positions  
Grip, cross section stranded wire:  
Minimum 0.14 mm<sup>2</sup> (25 AWG)  
Maximum 2.5 mm<sup>2</sup> (14 AWG)  
Wire strip length 5 mm (0.2 in)

### Cable entry

Cable gland M16x1.5  
Cable 4 to 8 mm dia. / 0.16 to 0.31 in

## Certifications and Approvals

- RoHS compliance
- Reach compliant



# ASCO™ Signaling Box

## Product selection guide

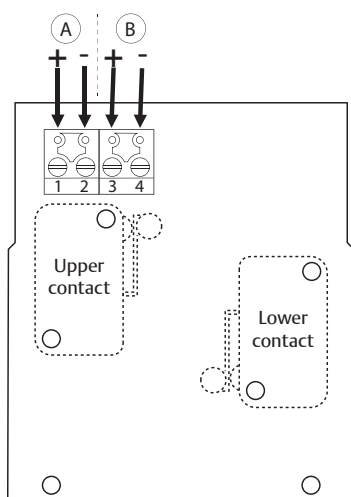
Operator	298-398 series valve option code <sup>(1)</sup> Signaling box supplied installed on valve	
	2 mechanical contacts	2 inductive contacts PNP
Ø 80 mm, Ø 100 mm, Ø 150 mm, Ø 200 mm	MC2	1C2

<sup>(1)</sup> Add the appropriate digits after the catalogue number of the selected valve, example:  
 - catalogue number of valve alone **E298B0370TA0000**  
 - catalogue number of valve + pre-installed inductive contacts box = **E298B0370TMC200**

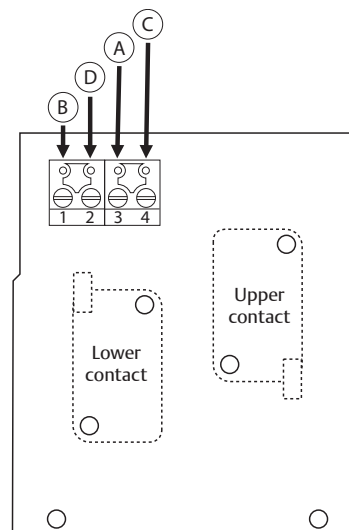
## Installation

- The signaling box can be installed in any position
- Adjustable signaling box enables 360° access to cable gland
- Installation/maintenance instructions are included with each signaling box
- Electrical connexion:


Mechanical contacts



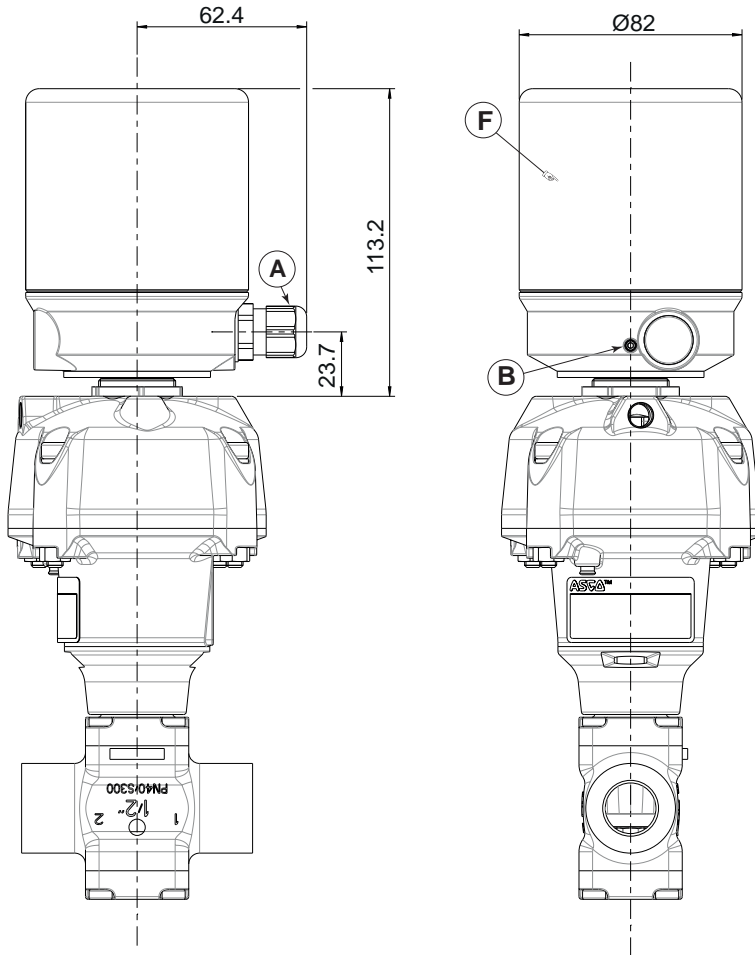
Inductive contacts (PNP/NPN)



- Ⓐ Closed valve signal
- Ⓑ Open valve signal
- Ⓒ Ground
- Ⓓ Power

Dimensions mm (inches), Weight kg (Lbs) 

Configurator - CAD Files



Weight (Signaling box alone)	
0.450	kg
1.01	(Lbs)

- (A) Cable gland
- (B) Unit rotation lock set screw  
(orientable through 360°)
- (F) Aluminium cover

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# ASCO™ Signaling Box

IECEx ATEX ia NAMUR, for series 298 and 398 valves

Series  
**890**

## Features and Benefits

- The signaling box gives electrical feedback of the valve closed and open position
- The signaling box is supplied installed and adjusted on the valve
- Specification are laser marked to prevent from loss during cleaning process
- Design allows setting of position of the signaling box through 360°
- Designed in accordance with ATEX Directive 2014/34/EU and EN/IEC 60079-0, EN/IEC60079-11 standards.
- Designed to be installed in potentially explosive atmospheres caused by gases, vapors or mists of groups II or III (category 1GD or 2GD) ATEX and IECEx CLASSIFICATION

**II 1 G Ex ia IIC T6-T4 Ga**

**II 1 D Ex ia IIIC T135°C Da**

EC type examination certificate no.: **LCIE 21 ATEX 3012X**

IECEx Certificate of Conformity no.: **IECEx LCIE 21.0018X**

## Operation

At both end-of-travel positions (open and closed) of the valve stem, cams on the signaling box plunger operate contacts which provide an electrical signal indicating that the end position is reached.

## General

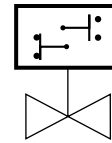
**Ambient temperature range** -20°C to +80°C (-4°F to 176°F)  
**Degree of protection** IP66 (EN 60529)

## Construction

**Body** Glass fiber filled PA  
**Cover** PA, transparent  
**Valve adaptor** Stainless steel  
**Stem and cams** Stainless steel and PEEK  
**Guiding and bearing** POM  
**Seals** NBR  
**Interface gasket** NBR  
**Cable gland** Polyamid + NBR

## Electrical characteristics

**Function** ON / OFF with 2 NAMUR intrinsic safety contacts  
**Contact type** Pepperl and Fuchs NJ2-V3-N  
(Ex ia Namur / Inductive contacts)  
**Characteristics**  
Nominal voltage 8.2 V (Ri approx. 1 kΩ)  
Hysteresis 0.01 ... 0.1 mm  
Suitable for 2/1 technology Yes, reverse polarity protection diode nor required  
Current consumption:  
Measuring plate not detected  $\geq 3$  mA  
Measuring plate detected  $\leq 1$  mA  
**Electrical connection** 2 terminal block with 2 positions  
Grip, cross section stranded wire:  
Minimum 0.14 mm<sup>2</sup> (25 AWG)  
Maximum 2.5 mm<sup>2</sup> (14 AWG)  
Wire strip length 5 mm (0.2 in)  
**Cable entry** Cable gland M16x1.5  
Cable 7 to 8 mm dia. / 0.27 to 0.31 in



**Safety parameters**

Type 1	Type 2	Type 3	Type 4
$U_i = 16\text{ V}$	$U_i = 16\text{ V}$	$U_i = 16\text{ V}$	$U_i = 16\text{ V}$
$I_i = 25\text{ mA}$	$I_i = 25\text{ mA}$	$I_i = 52\text{ mA}$	$I_i = 76\text{ mA}$
$P_i = 34\text{ mW}$	$P_i = 64\text{ mW}$	$P_i = 169\text{ mW}$	$P_i = 242\text{ mW}$
$C_i = 40\text{ nF}$	$C_i = 40\text{ nF}$	$C_i = 40\text{ nF}$	$C_i = 40\text{ nF}$
$L_i = 50\text{ }\mu\text{H}$	$L_i = 50\text{ }\mu\text{H}$	$L_i = 50\text{ }\mu\text{H}$	$L_i = 50\text{ }\mu\text{H}$

**Recommended interfaces:**

Galvanic separator:

- Pepperl & Fuchs Ref. KFA6-SR2-EX1.W
- MTL instruments Ref. MTL5511

ZENER barrier:

- MTL instruments Ref. MTL7742

Check that the interfaces used is adapted to the specified temperature and is compatible with the application.

**Max. ambient temperature (Ta), gas atmosphere and temperature class  
II 1 G Ex ia IIC T6-T4 Ga or II 2G Ex ia IIC T6-T4 Gb**

Ta	Type 1	Type 2	Type 3	Type 4
40°C	T6	T6	T6	T5
50°C	T6	T6	T5	T4
60°C	T6	T6	T4	T4
70°C	T5	T5	T4	<del>T4</del>
80°C	T5	T4	T4	<del>T4</del>

**Max. ambient temperature (Ta), dust atmosphere and max. surface temperature  
II 1 D Ex ia IIIC T<sub>200</sub> 135°C Da**

Ta	Type 1	Type 2	Type 3
70°C	T135°C	T135°C	T135°C
80°C	T135°C	T135°C	<del>T135°C</del>

**Certifications and Approvals**

- RoHS compliance
- IECEx, ATEX
- ATEX Directive 2014/34/EU and EN/IEC 60079-0, EN/IEC 60079-11

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# ASCO™ Signaling Box

## Product selection guide

operator	298-398 series valve option code <sup>(1)</sup> signaling box supplied installed on valve 2 intrinsically safe inductive contacts NAMUR
Ø 80 mm, Ø 100 mm, Ø 150 mm, Ø 200 mm	152

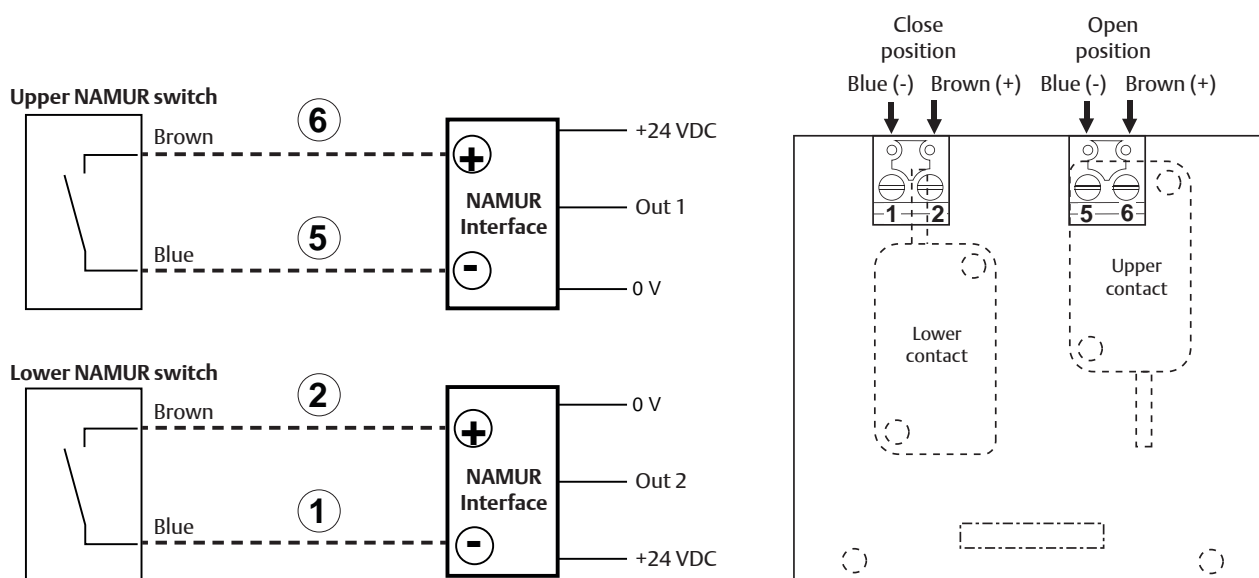
<sup>(1)</sup> Add the appropriate digits after the catalogue number of the selected valve, example:


- catalogue number of valve alone **E298B0370TA0000**

- catalogue number of valve + pre-installed intrinsically safe inductive contacts box = **E298B0370V15200**

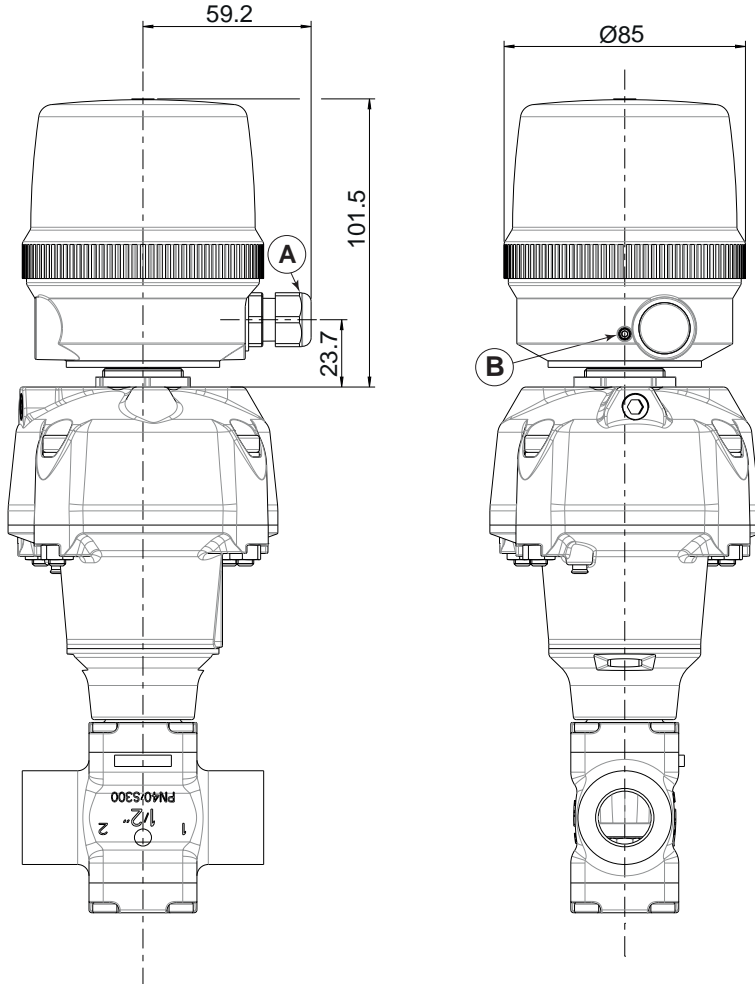
## Installation

- The signaling box can be installed in any position
- Adjustable signaling box enables 360° access to cable gland
- Installation/maintenance instructions are included with each signaling box
- Electrical connection:



**Dimensions mm (inches), Weight kg (Lbs)** 

Configurator - CAD Files



- Ⓐ Cable gland
- Ⓑ Unit rotation lock set screw (orientable through 360°)

Weight (Signaling box alone)	
0.350	kg
0.781	(Lbs)

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