



## Soldo HW Switchbox

The SOLDO HW series combines a compact enclosure with limit switches, visual indication and integral solenoids for position indication plus valve actuator control.

The HW's wide variety of switches and solenoid options make it the ideal low cost solution for use in water proof applications. NAMUR and proximity switch options combines with Ex ia and Ex n solenoid valve also make the series suitable for use in intrinsically safe and non incensive applications.

### WEATHER PROOF

The HW series is weatherproof IP67 and Nema 4, 4X and ideal for hostile, corrosive environments. The housing is die cast aluminum and polyester powder coated inside and outside and the shaft and trim are stainless steel. The pneumatic manifold including threaded areas is hard-coat anodized aluminum.

### INTEGRAL SOLENOID VALVE

The HW series integral single and double 5-way solenoid valves dramatically reduce automation assembly time. Factory pre-wiring ensures reliable startups and long-term reliability.

### PNEUMATIC MANIFOLD

The HW's pneumatic connections are ¼ inch NPT. Optional breathers, speed controls and NAMUR adapters for actuator air line connections reduce assembly time. Optional air pressure gauges enable monitoring air system pressures during setup and normal operation. The HW is also available with pneumatic connections according to VDI/VDE 3847.

### VALVE POSITION INDICATOR

HW's large two-color 3D indicator can be clearly viewed from overhead and from all sides. The indicator, mounted on a shaft spline allows precise final adjustment for accurate position indication. The HW is also available with a flat indicator and a blank cover for limited space installations.

### HIGH RESOLUTION SPLINED CAMS

Easy-set cams are splined spring loaded and independently adjustable. This design offers tool free calibration and positive vibration resistant engagement.



### SWITCH OPTIONS

The HW series is available with a variety of switches and feedback choices including: electromechanical, inductive proximity, NAMUR, NPN, PNP and hermetic sealed proximity dry contact switches; ASi digital communication and 4-20 mA position transmitter.

### INTEGRAL NAMUR MOUNTING BRACKET

The HW series features a unique bracketless mounting system for actuators conforming to ISO NAMUR standards. Extendable stainless steel mounting legs enable quick foolproof installation and adjustability for shaft lengths from 20 mm to 50 mm.

### TWIN SHAFTS

The HW series features unique Twin-Shaft construction with separate shaft sections in the limit switch housing and the cover. Keyed shaft ends align and interlock inside the enclosure during cover installation. Twin-Shafts provide two key benefits; headroom requirement is reduced from 50 mm (2 inch) to less than 12 mm (½ inch) and the visual indicator assembly remains closed and sealed during cover removal and reinstallation

*Linking the Process  
with the Control Room*

# Product Specification

## Technical Data:

### Materials

- Die-cast aluminum body and cover with polyester powder coating
- Stainless steel fasteners and shafts

### Approvals:

EAC, UL general purpose

### Protection rating:

IP 66 / 67

### Cable entries options:

Up to three cable entries for metric and imperial sizes

### Temperature:

-20 °C +80 °C as standard temperature range (depending on switch selection)

-40 °C +105 °C available on request

## Twin shaft design features

- The shaft is split into two parts; both parts fitted and sealed respectively on body and cover
- During opening and closing the grease remains in place ensuring a safe and smooth operation
- Self lubricant bushing on both sides aligning shafts and hedging in o-rings
- The indicator is hardly connected to the upper shaft, avoiding any matching and aligning issue
- The interior electrical components are completely protected against atmosphere environments

## Soldo switch and sensors options:

### NOVA V3™ N1

- Proximity hermetically sealed snap acting SPDT switch
- High power loop: rating up to 5A @ 250 VAC - 5A @ 28 VDC
- Temperature range -50 °C , +95 °C



### NOVA V3™ N3

- Proximity hermetically sealed snap acting SPDT switch
- High power loop: rating up to 1A @ 250 VAC - 1A @ 30 VDC
- Temperature range -50 °C , +95 °C



### NOVA V3™ N4

- Proximity hermetically sealed snap acting DPDT switch
- High power loop: rating up to 5A @ 250 VAC - 5A @ 28 VDC
- Temperature range -50 °C , +95 °C



### REED C4

- Proximity hermetically sealed reed SPDT switch
- Inert gas contact chamber
- Rating up to 1A @ 24 VDC
- Temperature range -60 °C , +100 °C

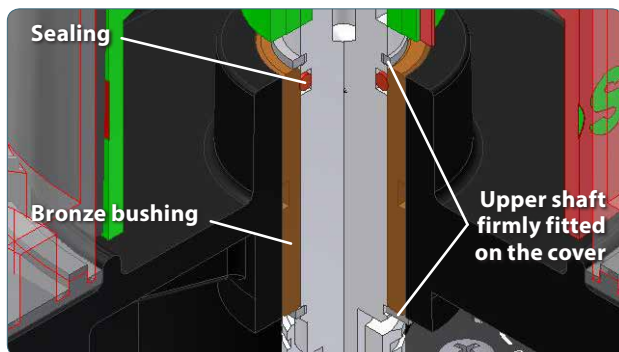


### REED C8

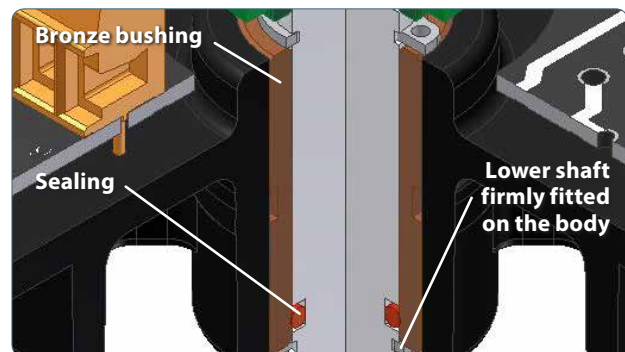
- Proximity hermetically sealed reed DPDT switch
- Inert gas contact chamber
- Rating up to 1A @ 24 VDC
- Temperature range -60 °C , +100 °C



More options available on request.



Upper shaft



Lower shaft

## Profibus® Option

We introduced the Profibus communication bus into our HW series to provide a complete control unit, facing all demanding field applications.

The control unit is complete of a single or double coil integrated solenoid valve controlling the actuator, two digital input for position feedback detection and two external digital feedback.

### Features and Benefits

- Weather proof enclosure
- 3D red and green visual position indicator
- 2 1/2" NPT cable entries
- 1 3/4" NPT cable entry
- Profibus communication board
- Two digital input for valve position detection
- Two extra dry contact inputs available for customer needing
- Two digital output for solenoid valve connection adjustable metal cams Integrated mounting legs for namur actuators
- Integrated solenoid valve 5/2 way convertible in 3/2 way.

### Profibus®

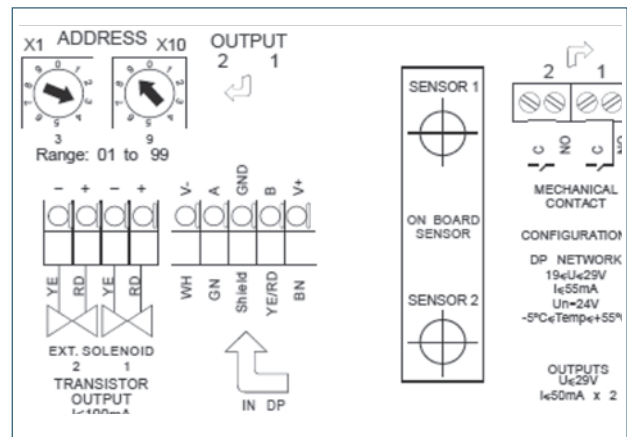
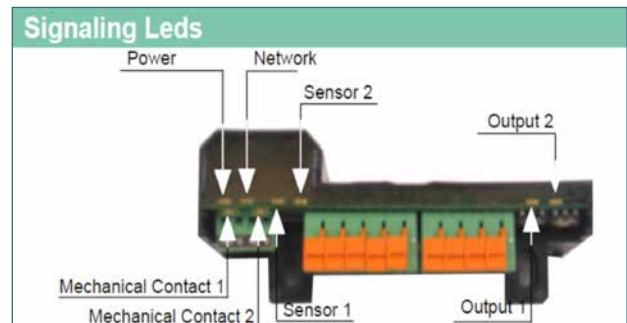
Profibus is a leading international network protocol for high speed data communications in industrial automation and control.

Profibus is the world's most successful fieldbus with 50.9 million devices installed by the end of 2014 with over 9 million of these in the process industries.

Utilizing a single, standardized, application-independent communication protocol, Profibus supports fieldbus solutions both in factory and process automation as well as in motion control and safety-related tasks.



**PROFI**  
**BUS**



# Product Ordering Matrix

## Nomenclature

		HW	N1	2	2	2	-	3	T	W	9	7	P	3	0	A
<b>HW</b>	Aluminum control unit enclosure	Series														
<b>01</b>	SPDT electromechanical switches, silver plated contacts	Switch type														
<b>03</b>	SPDT electromechanical switches, gold plated contacts															
<b>1F</b>	DPDT electromechanical switches silver plated contacts															
<b>60</b>	NAMUR inductive proximity sensor P+F type SJ 3, 5 N, NAMUR NC 2 wire (for Exia cert)															
<b>62</b>	NAMUR inductive proximity sensor P+F type SJ 3, 5 SN, NAMUR NC 2 wire (for Exia cert, low temp)															
<b>63</b>	NAMUR inductive proximity sensor P+F type SJ 3, 5 S1N, NAMUR NO 2 wire (for Exia cert)															
<b>70</b>	NAMUR inductive proximity sensor P+F type NJ2-V3-N, NAMUR NC 2 wire (for Exia cert)															
<b>73</b>	Inductive proximity P+F NBB2-V3-E2, 3 wire PNP NO															
<b>C4</b>	Magnetic SPDT hermetically sealed switch, max. 1A @ 24 VDC (usable in Exia cert)															
<b>C8</b>	Magnetic DPDT hermetically sealed switch, max. 1A @ 24 VDC (usable in Exia cert)															
<b>N1</b>	Magnetic proximity SPDT hermetically sealed switch, silver plated snap acting contacts															
<b>N3</b>	Magnetic proximity SPDT hermetically sealed switch, gold plated snap acting contacts															
<b>N4</b>	Magnetic proximity DPDT hermetically sealed switch, silver plated snap acting contacts															
<b>DB</b>	"Drible control system for spring return actuators 5 mechanical switches (3 for position feedback) 5/3 way, double coil, special schematic, solenoid valve"															
<b>DA</b>	"Drible control system for double acting actuators 5 mechanical switches (3 for position feedback) 5/3 way, double coil, closed centers, solenoid valve"															
<b>A1</b>	Asi board with N°2 SPDT switches and solenoid valve control	Switch Quantity														
<b>T0</b>	4-20 mA analog position transmitter															
<b>H0</b>	4-20 mA HART T transmitter Exia IIC certified															
<b>PF</b>	Profibus communication board															
<b>0</b>	No switches for digital limit position feedback	Terminals														
<b>2</b>	Nr. 2 switches or sensors															
<b>3</b>	Nr. 3 switches or sensors															
<b>4</b>	Nr. 4 switches or sensors (not available for sensors 60, 62, 63)															
<b>0</b>	Circuit board with extra pass-through terminals (standard)	Coating														
<b>2</b>	Circuit board with extra pass-through terminals (standard for Exia certification)															
<b>0</b>	Black polyester powder coating (only for aluminum)															
<b>1</b>	Blue RAL5015 polyester powder coating (only for aluminum)															



# Product Ordering Matrix

## Nomenclature

1	N°2 1/2" NPT cable entries
2	N°2 M20x1.5 cable entries
3	N°2 1/2" NPT + 3/4" NPT cable entries
4	N°2 M20x1.5 + M25x1,5 cable entries
0	Red and green visual position indicator
1	No visual position indicator
T	316 stainless steel 3D visual position indicator
W	Weather proof limit switch box
Z	Weather proof limit switch box SIL2
Y	Weather proof limit switch box SIL3
G	EAC certified box for Russian market, with RTN permit
F	EAC certified box for Russian market, with RTN permit and SIL2 approval
H	EAC certified box for Russian market, with RTN permit and SIL3 approval
U	UL certified box
0	Ordinary location
A	CULUS normally location
B	ULUS normally location
9	CULUS non incendive class 1/2 div2 (available with C4, C8, N1, N3, N4 switch series)
1	Weather proof IP66/IP67
2	Weather proof IP67
7	Nema 4 4X
A	Ambient temperature range: -20 °C + 80 °C
L	Ambient temperature range: -40 °C + 80 °C
P	Ambient temperature range: -60 °C + 80 °C (available with C4, C8 switch series)
3	Aluminum heavy duty body and cover
A	Aluminum heavy duty body and cover die-cromated 5/2 way alluminum solenoid valve, single coil
B	Aluminum heavy duty body and cover die-cromated 5/2 way alluminum solenoid valve, double coil
C	Aluminum heavy duty body and cover die-cromated 5/3 way alluminum solenoid valve, blocked center , double coil
D	Aluminum heavy duty body and cover die-cromated 5/3 way alluminum solenoid valve, exhaust center , double coil
0	No solenoid valve available
2	Coil rating: 12 VDC 2, 3 W
3	Coil rating: 24 VDC 2, 3 W
4	Coil rating: 24 VAC 2, 8 VA
5	Coil rating: 110 VAC 2, 8 VA
6	Coil rating: 230 VAC 2, 8 VA
1	Exia certified pilot valve coil rating: 6 VDC
7	Exia certified pilot valve coil rating: 12 VDC
8	Exia certified pilot valve coil rating: 24 VDC
9	Exn certified pilot valve coil rating: 24 VDC
A	Exn certified pilot valve coil rating: 110 VAC
0	No pneumatic connections
A	1/4" NPT/F pneumatical connections
B	1/4" NPT/F pneumatical connections with gauges
C	1/4" BSP/F pneumatical connections

HW N1 2 2 2 - 3 T W 9 7 P 3 0 A

Cable Entries

Visual Position Indicator

Approval

Marking

IP Protection rating

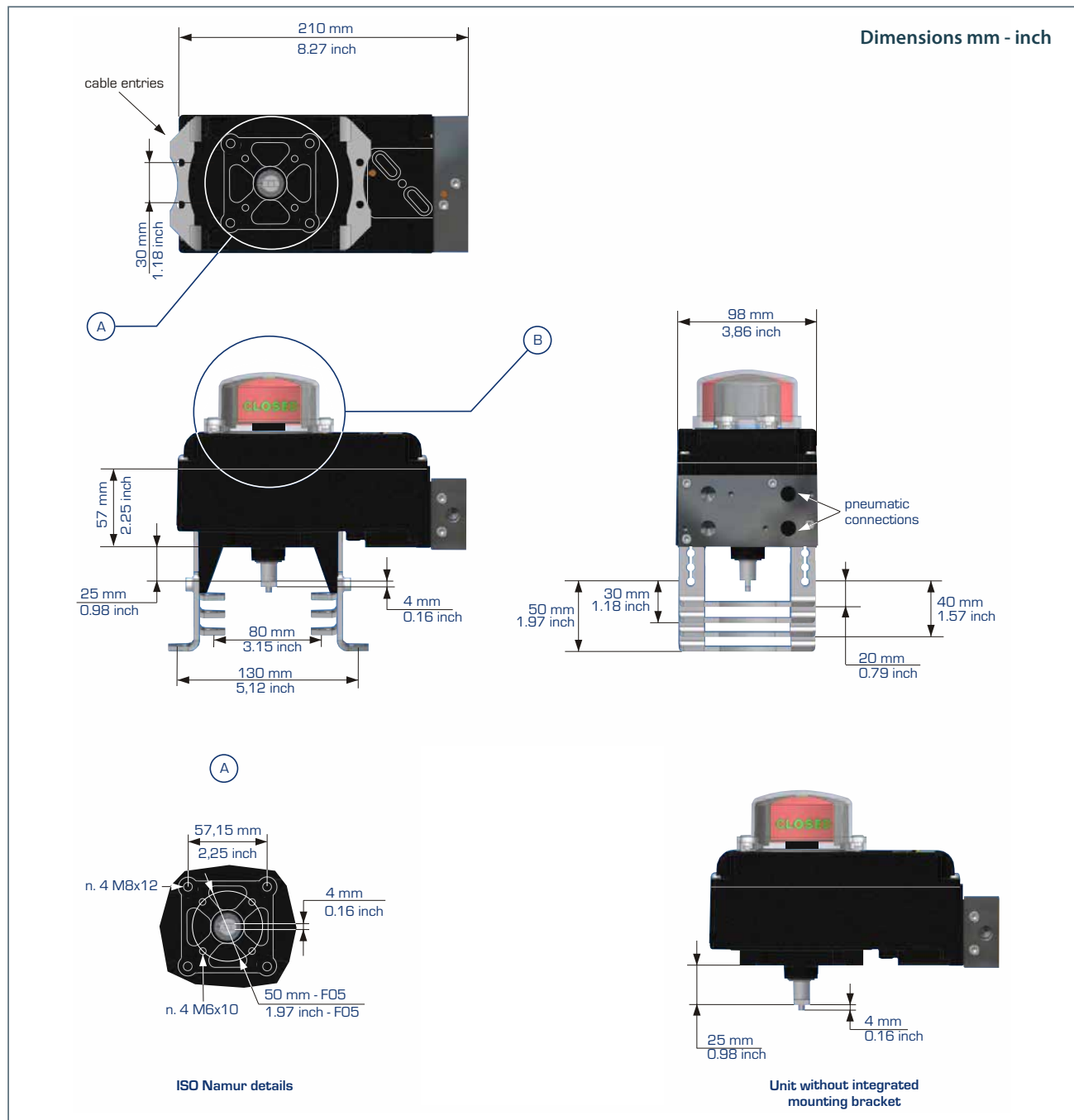
Temperature

Material and solenoid valve selection

Coil Rating

Pneumatical Connection

# Product Dimensions



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