

0510/0511

Order matrix for electronic pressure switches

E.2

hex 24
Performance
field adjustable



| | | | | | |
|--|-------------|-------------------------|----------------------------|----------------------|------------------------------|
| | Type | Adjustment range | Pressure connection | Seal material | Electrical connection |
|--|-------------|-------------------------|----------------------------|----------------------|------------------------------|

Type

| | |
|---|-------------|
| Normally open (NO), PNP, set point - field adjustable | 0510 |
| Normally closed (NC), PNP, set point - field adjustable | 0511 |

| Max. overpressure ¹⁾ | Burst pressure | Pressure range | |
|---------------------------------|---------------------|---------------------------------|------------|
| 4 bar (58 psi) | 8 bar (115 psi) | 0 – 2 bar (approx. 29 psi) | 200 |
| 10 bar (145 psi) | 20 bar (290 psi) | 0 – 4 bar (approx. 58 psi) | 400 |
| 20 bar (290 psi) | 35 bar (500 psi) | 0 – 10 bar (approx. 145 psi) | 101 |
| 40 bar (580 psi) | 60 bar (870 psi) | 0 – 16 bar (approx. 230 psi) | 161 |
| 100 bar (1,450 psi) | 140 bar (2,000 psi) | 0 – 40 bar (approx. 580 psi) | 401 |
| 150 bar (2,175 psi) | 300 bar (4,350 psi) | 0 – 100 bar (approx. 1,450 psi) | 102 |

Pressure connection

| | |
|---|-----------|
| 1/4 BSPP – ISO 1179-2 (DIN 3852), form E, male thread | 41 |
| NPT 1/4 | 09 |

Seal material – Application areas

| | | |
|---------------------|--|----------|
| NBR (BunaN) | Hydraulic/machine oil, heating oil, air, nitrogen, etc. | 1 |
| EPDM | Brake fluid, water, acetylene, hydrogen, etc. | 2 |
| FKM (Viton®) | Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc. | 3 |
| TPE | Mineral oil, HFC, HFD, water, water-salt solutions, methanol | 7 |

Electrical connection

| | |
|---|------------|
| DIN EN 175301-803-A (DIN 43650-A) coupler socket included in delivery | 013 |
| M 12x1 - DIN EN 61076-2-101-A | 002 |
| Bayonet ISO 15170-A1-4.1 (DIN 72585-A1-4.1) | 004 |
| AMP Superseal 1.5° | 007 |
| Deutsch DT04-3P | 010 |

| | | | | | |
|----------------------|-------------|------------|-----------|----------|------------|
| Order number: | 05XX | XXX | XX | X | XXX |
|----------------------|-------------|------------|-----------|----------|------------|

¹⁾ Static pressure, dynamic pressure 30 to 50% lower. Values refer to the hydraulic or pneumatic part of the electronic pressure switch.



Technical details

| | | | | | | |
|--------------------------------------|---|--|-------------------------|-------------------------|-------------------------|----------------------------|
| Type: | 0510 NO 0511 NC | | | | | |
| Transistor output: | PNP output (High-Side N-channel) | | | | | |
| Supply voltage: | 9.6 – 32 VDC with reverse voltage protection | | | | | |
| Output current: | 0.5 A with short-circuit and overvoltage protection | | | | | |
| Idle power consumption: | < 30 mA | | | | | |
| Standard pressure range p_{nom} : | 0 – 2 bar (29 psi) | 0 – 4 bar (58 psi) | 0 – 10 bar (145 psi) | 0 – 16 bar (230 psi) | 0 – 40 bar (580 psi) | 0 – 100 bar (1,450 psi) |
| Overpressure protection $p_u^{1)}$: | 4 bar (58 psi) | 10 bar (145 psi) | 20 bar (290 psi) | 40 bar (580 psi) | 100 bar (1,450 psi) | 150 bar (2,175 psi) |
| Burst pressure ¹⁾ : | 8 bar (115 psi) | 20 bar (290 psi) | 35 bar (500 psi) | 60 bar (870 psi) | 140 bar (2,000 psi) | 300 bar (4,350 psi) |
| Mechanical life expectancy: | 5,000,000 pulsations at rise rates to 14.5 psi/ms (1 bar/ms) at p_{nom} | | | | | |
| Pressure rise: | ≤ 14.5 psi/ms (≤ 1 bar/ms) | | | | | |
| Accuracy: | ±0.5 % of adjustment range p_{nom} (full scale (FS)) at room temperature | | | | | |
| Switching point adjustment range: | 2 ... 100 % of adjustment range p_{nom} (FS), field adjustable | | | | | |
| Differential: | 1 ... 98 % FS, programmable at factory (max. tolerance ±1.0 % of adjustment range p_{nom}) | | | | | |
| Resolution: | 0.2% of adjustment range p_{nom} (FS) | | | | | |
| Long term stability: | ±0.1 % of adjustment range p_{nom} (FS) per year | | | | | |
| Repeatability ²⁾ : | ±0.1 % of adjustment range p_{nom} (FS) | | | | | |
| Switching time: | < 4 ms | | | | | |
| Temperature error ²⁾ : | ±0.04 % of adjustment range p_{nom} (FS) / °C | | | | | |
| Compensated temperature range: | +32 °F ... +158 °F (0 °C ... +70 °C), total error ≤ 2 % | | | | | |
| Temperature range ambient: | -22 °F ... +212 °F (-30 °C ... +100 °C) | | | | | |
| Temperature range media: | with NBR (BunaN) seal: -22 °F ... +212 °F (-30 °C ... +100 °C) | | | | | |
| | with EPDM seal: -22 °F ... +257 °F (-30 °C ... +125 °C) | | | | | |
| | with FKM (Viton®) seal: -4 °F ... +257 °F (-20 °C ... +125 °C) | | | | | |
| | with TPE seal: -22 °F ... +230 °F (-30 °C ... +110 °C) | | | | | |
| Wetted parts material | Housing: | Stainless steel (AISI 303 / 1.4305) | | | | |
| | Measuring cell: | Ceramic | | | | |
| | Seal material: | NBR (BunaN), EPDM, FKM (Viton®) or TPE ³⁾ | | | | |
| Insulation resistance: | > 100 MΩ (500 VDC, $R_i > 42 \Omega$) | | | | | |
| Vibration resistance: | 20 g; at 4 ... 2000 Hz sine wave; DIN EN 60068-2-6 | | | | | |
| Shock resistance: | 500 m/s ² ; 11 ms half sine wave; DIN EN 60068-2-27 | | | | | |
| Protection class: | IP65: DIN EN 175301-803-A IP67: M12x1, AMP Superseal®, cable connector IP67 and IP6K9K: Bayonet ISO 15170-A1-4.1, Deutsch DT04-3P | | | | | |
| Electromagnetic compatibility: | EMC 2014/30/EU, EN 61000-6-2:2005, EN 61000-6-3:2007 | | | | | |
| Cable output thread size: | For DIN EN 175301: PG9 (outside diameter of cable 6 to 9 mm) | | | | | |
| Weight: | approx. 2.82 oz / 80 g (DIN EN 175301 approx. 3.88 oz / 110 g) | | | | | |

¹⁾ Static pressure, dynamic pressure 30 to 50% lower. Values refer to the hydraulic or pneumatic part of the electronic pressure switch.

²⁾ Within the compensated temperature range

³⁾ Thermoplastic elastomers

E.2

hex 24
Performance
field adjustable



| | no / nc | |
|-----|---------|--|
| ○ 1 | (+) | |
| ○ 2 | (GND) | |
| ○ 3 | (OUT) | |

0510 / 0511

Electrical connectors and threads

DIN EN 175301-803-A

| Pin | Assignment |
|-----|------------------|
| 1 | U _{v+} |
| 2 | Gnd |
| 3 | U _{out} |
| PE | |

IP65

x ~ 60 mm without coupler socket
x ~ 77 mm with coupler socket

Order number: 013

M 12 – DIN EN 61076-2-101 A

| Pin | Assignment |
|-----|------------------|
| 1 | U _{v+} |
| 2 | nc |
| 3 | Gnd |
| 4 | U _{out} |

IP67

x ~ 54 mm

Order number: 002

ISO 15170-A1-4.1

| Pin | Assignment |
|-----|------------------|
| 1 | U _{v+} |
| 2 | Gnd |
| 3 | U _{out} |
| 4 | nc |

IP67, IP6K9K

x ~ 56 mm

Order number: 004

AMP Superseal 1.5°

| Pin | Assignment |
|-----|------------------|
| 1 | U _{out} |
| 2 | Gnd |
| 3 | U _{v+} |

IP67

x ~ 61 mm

Order number: 007

Deutsch DT04-3P

| Pin | Assignment |
|-----|------------------|
| A | U _{v+} |
| B | Gnd |
| C | U _{out} |

IP67, IP6K9K

x ~ 61 mm

Order number: 010

Thread code: 41

Thread code: 09

Accessories

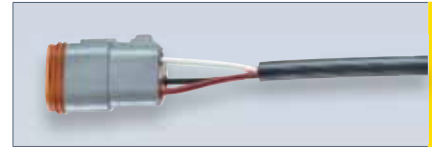
Mating plugs

E.7

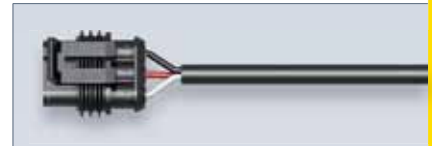
Accessories



| | | |
|---|--|--|
| <p>Deutsch DT06-3S (for DT04-3P) 3 x 0.5 mm² PUR cable 6.5 ft (2 m), IP67</p> | <p>Suitable for connector code 010 Deutsch DT04-3P</p> | <p>Order number: 1-1-36-653-160</p> |
|---|--|--|



| | | |
|---|--|--|
| <p>TE AMP Superseal 1.5[®], 3-pin 3 x 0.5 mm² Radox cable 6.5 ft (2 m), IP65</p> | <p>Suitable for connector code 007 AMP Superseal 1.5[®]</p> | <p>Order number: 1-1-32-653-158</p> |
|---|--|--|



| | | |
|---|---|--|
| <p>M12 DIN EN 61076-2-LF, 4-pin 4 x 0.34 mm² PUR cable 6.5 ft (2 m), IP65</p> | <p>Suitable for connector code 002 M12 DIN EN 61076-2-101 A</p> | <p>Order number: 1-1-00-653-162</p> |
|---|---|--|



| | | |
|--|---|--|
| <p>M 12x1 DIN EN 61071-2-101 D straight, 4-pin Terminals for wire diameter 0.75 mm² (AWG 18)</p> | <p>Suitable for connector code 002 M12 DIN EN 61076-2-101 A</p> | <p>Order number: 1-6-00-652-016</p> |
|--|---|--|



| | | |
|--|---|--|
| <p>Coupler socket M 12x1 DIN EN 61071-2-101 D Angled, 4-pin Terminals for wire diameter 0.75 mm² (AWG 18)</p> | <p>Suitable for connector code 002 M12 DIN EN 61076-2-101 A</p> | <p>Order number: 1-6-00-652-017</p> |
|--|---|--|



Electronic pressure switches, Performance series 0510, 0511

hex 24, field adjustable



- Housing/wetted parts made of stainless steel AISI 303 (1.4305), others on request
- Ceramic sensor in thick film technology
- Field adjustable with the set screw
- Very competitively priced electronic pressure switches
- High overpressure protection (up to 2 x)
- Small, compact electronic switches
- Broad diversity of electronic and mechanical connection options
- High level of adaptability to your requirements (custom solutions)
- Differential adjustable within broad range (1% - 98%, set at factory)