

HERMES

This User Guide is applicable to the following switch types:

- PF4 Medium Pressure
- PF4 High Pressure

General precautions

- Products should be specified, installed, set and maintained by competent personnel in line with relevant health and safety regulations.
- They must not be used outside their stated specifications as this may affect safety and/or performance.
- Any unauthorised modification, repair or use outside the stated specifications may invalidate a product's warranty.
- The installation of products that are certified Ex db must be in accordance with IEC/EN 60079-14.
- It is the responsibility of the end-user to ensure that the product's materials of construction are compatible with the process media and the surrounding atmosphere.
- If products are being fitted to a system where fluid flow can become unstable and cause pressure to pulsate or surge rapidly, it is imperative that a means of protecting the sensing element be provided; by adding a pressure snubber for example.
- If products are being fitted to a system where the process temperature could exceed the limits stated for that particular configuration (please consult "Temperature limitations"), they must be remote-mounted so as to allow for sufficient heat dissipation.
- Products should always be mounted such that any free movement is minimal. Those mounted via process connections must be properly supported so as to avoid damage from vibration or accidental impact.
- The end-user is advised to utilise PTFE tape on tapered process connections and appropriately sized bonded seals on parallel process connections.
- All compression fittings must be sufficiently tightened so as to prevent leakage.

CE marking

Hazardous area products carry a CE mark to signify conformity with Directive 2014/34/EU (ATEX).

All Hermes switch types are deemed to fall within the sound engineering practice (SEP) category, as defined by Chapter 1, Article 4, paragraph 3 of Directive 2014/68/EU (Pressure Equipment). As such, CE marks borne by Hermes products do not signify conformance with Directive 2014/68/EU, but rather with Directive 2014/34/EU.

Hazardous area use

Ex db certified products satisfy the applicable essential health and safety requirements contained in Annex II of European Directive 2014/34/EU through compliance with the following standards:

- BS EN IEC 60079-0:2018
- BS EN 60079-1:2014

In addition, they comply with IEC standards:

- IEC 60079-0:2017
- IEC 60079-1:2014

These dual ATEX/IECEx certified products are thus marked as shown overleaf.

The end-user must adhere to the special conditions for safe use laid down on the ATEX/IECEx Ex db certificates.

- Flameproof joints not intended for repair.
- External earthing is facilitated by the electrical continuity between the enclosure and the process connection. End-users must take this into account during installation.
- Microswitches must only be accessed by Pyropress-approved personnel and only when no explosive atmosphere is present.

Materials of construction

Switch outer case:

- 316 stainless steel

Other external parts:

- 316 stainless steel
- Zinc plated steel (30mm A/F locknut)
- Polyester (label)

Wetted parts:

- 316 stainless steel
- Monel® 400

Diaphragm and pressure seals:

- Viton®
- Nitrile

Environmental seals:

- Nitrile
- Silicone

Fasteners:

- A2 stainless steel

Cable:

- Copper
- Silicone
- Polyolefin
- PVC

Pressure limitations

Medium Pressure: **50 barg max.**

High Pressure
Piston codes S1, S2 and S3: **700 barg max.**

High Pressure
Piston code S7: **1000 barg max.**

Temperature limitations

Products can be stored and operated between the following temperatures;

Storage: -40°C to +85°C

Operational ambient: -40°C to +85°C

Upper ambient temperatures will be further restricted if products are installed;

in a T6 environment: **+71°C maximum**

Process media temperatures are limited to:

Viton®: **-20°C to +150°C**

Nitrile: **-30°C to +100°C**

WARNING: Upper temperature limits for process media can be further restricted for Ex db certified products. If the applicable temperature on the Ex db certificate is lower than one given in this User Guide, the one on the certificate prevails. Please refer to the relevant certificate for details.

Other limitations

Ex db certified products maintain a versatile rating of IP66/IP67.

End-users requiring information about shock and vibration limits should contact Pyropress.

Mechanical installation

The Hermes can be mounted in any orientation without affecting function or performance.

When mounting via a **male process connection:**

Screw the stem head into the associated female thread and tighten with a spanner (utilise a suitable seal in conjunction with parallel threads

whilst for tapered threads the use of PTFE tape is recommended). Rotate the product to the desired position then tighten the coupling nut to secure firmly in place. Please note that care should be taken when rotating and tightening so as not to loosen the internal nipple.

When mounting via the **cable gland thread;**

If the cable gland possesses a tapered thread: Screw the gland directly into the female thread and tighten with a spanner.

If the cable gland possesses a parallel thread: Unscrew the 30mm A/F locknut supplied. If connecting to a bracket, dispense with the bonded seal. If connecting to a junction box leave the bonded seal in position. Feed the male threaded portion of the gland through the clearance hole (Ex e certified box) or screw directly into the female thread (Ex d certified box) then replace the locknut and tighten with a spanner to clamp the product in place.

WARNING: When installing or disconnecting a product, only use a spanner on the respective gland nut and pressure entry flats. The housing flats should not be used since the position of this component is factory set. Breaking of the blue seal invalidates the warranty.

Electrical connections

All products are flying lead and possess a cable gland with either an M20 x 1.5 or 1/2" NPT male thread.

- Products with a single microswitch have one double insulated cable of nominal outer diameter 7.8mm containing 4 cores of cross-sectional area 0.75mm²
- Products with two microswitches have one double insulated cable of nominal outer diameter 9.2mm containing 7 cores of cross-sectional area 0.75mm².

Wiring details (single switch)

- 1 - Common
- 2 - Normally closed
- 3 - Normally open
- 7 - Earth

Wiring details (dual switch)

- 1 - Common
- 2 - Normally closed
- 3 - Normally open
- 4 - Common
- 5 - Normally closed
- 6 - Normally open
- 7 - Earth

WARNING: The connected cable must be at least 300mm long. This figure has been obtained via Notified Body-conducted tests and overrides the 3m minimum specified in sub-clause 10.6.2 of IEC/EN 60079-14. The end-user must ensure that all products are properly earthed in accordance with IEC/EN 60079-14.

Set-point adjustment

Products supplied by Pyropress are always calibrated but, if necessary, can be reset once installed. To alter a product's setting, follow this procedure:

1. Loosen the M3 set screw next to the "SET" label with a 1.5mm A/F hex drive (the two other M3 set screws are deliberately left untightened when they leave the factory).
2. Using a Ø3mm tommy bar, rotate the outer tube – clockwise (anti-clockwise if the product is inverted) to increase the set-point or anti-clockwise (clockwise if the product is inverted) to decrease the set-point – until the desired setting is obtained. Cycle the pressure to verify.
3. Re-tighten the original M3 set screw (or one of the other two if the original is not accessible). Cycle the pressure again to ensure the setting remains unchanged.

WARNING: The position of the set screw covered by the non-adjustment label must not be altered. Failure to re-tighten any of the M3 set screws could see the set-point move as a result of vibration.

Routine maintenance

WARNING: The end-user must ensure that products are de-energised and isolated from pressurised media prior to disconnecting them from the system. Temperatures of exposed surfaces should be checked before handling so as to avoid injury.

Pyropress recommends that all products be inspected and operated at least once every 6 months. Process and electrical connections should be checked to ensure they remain tight.

O-rings, bonded seals and diaphragms should be renewed every 3 to 5 years. Microswitch assemblies should be renewed every 5 to 10 years, depending on usage.

Fault diagnosis

In the event that a product fails to operate correctly, please check that:

1. All process entry connections are screwed tight and there is no discernible leakage of the media.
2. Electrical wires are terminated correctly.
3. Microswitches are functioning correctly by observing a change in contacts, both when they operate and when they reset.

If after taking these steps the problem still persists, please contact Pyropress.

Spares

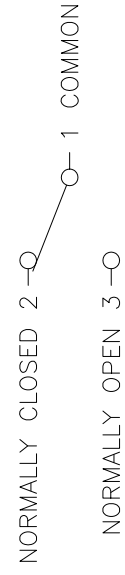
There are no spares kits available for the Hermes. Please contact Pyropress should refurbishment be required.

Contact details

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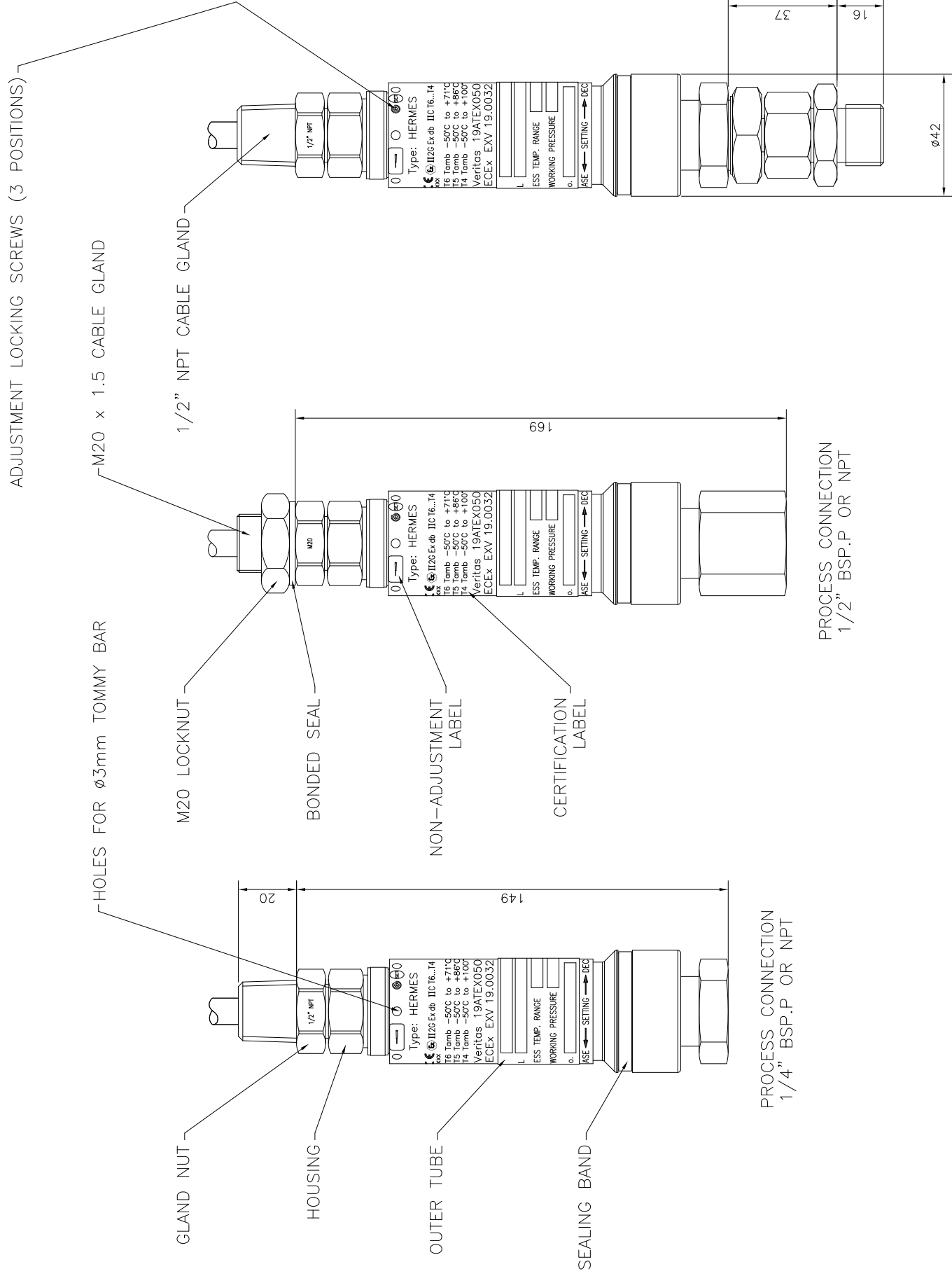
Document revision: 14G (23.05.19)

SINGLE MICRO SWITCH



ELECTRICAL RATING
 5A - 250V A.C.
 3A - 30V D.C.

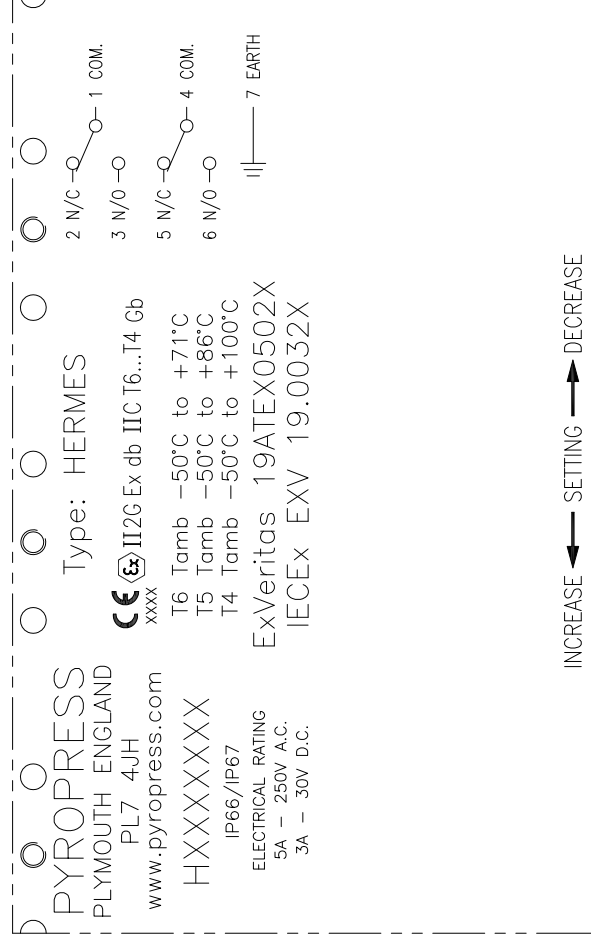
DOUBLE MICRO SWITCH



PROCESS CONNECTION
 1/4" BSP.P OR NPT

PROCESS CONNECTION
 1/2" BSP.P OR NPT

PROCESS CONNECTION
 1/2" BSP.P MALE



CERTIFICATION LABEL

PROCESS CONNECTION
 1/2" NPT MALE