DIASTAR Limit Switch
ER52-53

General

- **Cover:** Styrene Acrylonitrile (SAN)
- **Body**: PP
- **Seals**: NBR
- **Switch:** Mechanical, inductive
- **Mount**: Threaded direct
- **Base Material:** Brass
- **Sensing Pin Material:** Stainless steel
- **Sensing Pin Extensions:** Stainless steel
- **Cam Material:** PA
- **DIN Plug**: 3P + E, form A per DIN43650 (excluding ER 52/3-6)
- **Protection Class:** IP65

Conformity with Relevant Provision

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2004/108/EC

Definition of Type

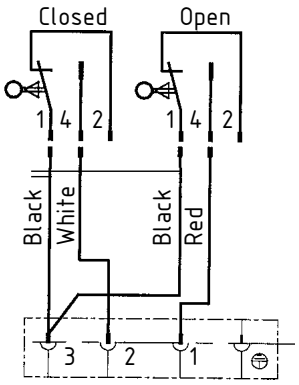
- **ER52:** DIASTAR Valves ½" - 2"
- **ER53:** DIASTAR Valves 2½" - 6"

Sample Specification

The Type ER52 and ER53 Limit Switch shall be used in conjunction with a DIASTAR Pneumatically Actuated Diaphragm Valve operating with open/close functionality. The DIN connector input shall utilize a cable gland with the exception of the ER52-6 and ER53-6 which shall be pre-wired and supplied with a 75 inch lead. The mount shall be direct to the DIASTAR actuator with the utilization of provided sensing pin extensions and threaded adapters. The sensing pin adapters shall be reverse threaded. The cams shall be of polyamide material of adjustable within the stroke limitations of the sensing pin. The cover to body connection shall be threaded and secured from backing off via a stainless steel machine screw. All variants shall be compatible for use in conjunction with a GF DIASTAR Stroke Limiter.

Mechanical Switch Technical Data

Mechanical Wiring



ER 52-1 (AgNi)

- **Valve Size:** ½" - 2" (d20 - d63)
- **Contact:** AgNi
- **Max Voltage:** 250VAC
- **Max Current:** 6A

ER 53-1 (AgNi)

- **Valve Size:** 2½" - 6" (d75 - d160)
- **Contact:** AgNi
- **Max Voltage:** 250VAC
- **Max Current:** 10A

ER 52-2 (Au)

- **Valve Size:** ½" - 2" (d20 - d63)
- **Contact:** Au
- **Max Voltage:** 4 - 30VDC
- **Max Current:** 1 - 100mA

ER 53-2 (Au)

- **Valve Size:** 2½" - 6" (d75 - d160)
- **Contact:** Au
- **Max Voltage:** 4 - 30VDC
- **Max Current:** 1 - 100mA

Inductive Switch Technical Data

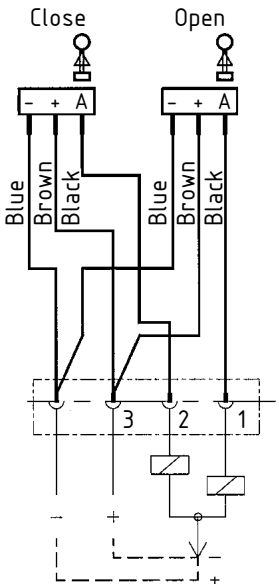
ER 52-3 (NPN)

- **Valve Size:** ½" - 2" (d20 - d63)
- **Switch Type:** NPN
- **Max Voltage:** 10 - 30VDC
- **Max Current:** 100mA

ER 52-4 (PNP)

- **Valve Size:** ½" - 2" (d20 - d63)
- **Switch Type:** PNP
- **Max Voltage:** 10 - 30VDC
- **Max Current:** 100mA

ER 52 Inductive Wiring



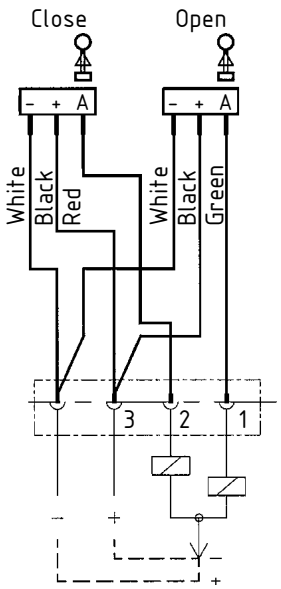
ER 53-3 (NPN)

- **Valve Size:** 2½" - 6" (d75 - d160)
- **Switch Type:** NPN
- **Max Voltage:** 9.6 - 55VDC
- **Max Current:** 200mA

ER 53-4 (PNP)

- **Valve Size:** 2½" - 6" (d75 - d160)
- **Switch Type:** PNP
- **Max Voltage:** 9.6 - 55VDC
- **Max Current:** 200mA

ER 53 Inductive Wiring

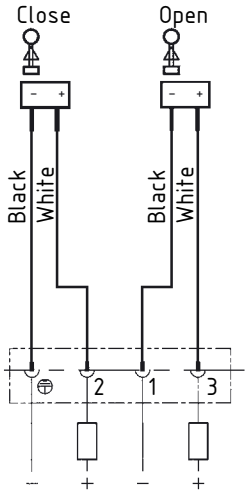


Intrinsically Safe Switch Technical Data

ER 52-5, ER 53-5

- **Switch:** PEPPERL+FUCHS Inductive Sensor
- **Valve Size:** ½" - 2" (d20 - d63)
- **Switch Type:** Inductive
- **Standard:** EN 60079-0:2012, EN 60079-11:2012
- **Hazardous Area:** PTB 00 ATEX 2032X
- **Device Category:** 2G; 1D
- **ATEX Protection:** II 2G Ex ia IIC T6...T1 Gb
- **Max Voltage:** 8VDC
- **Disengaged Current Consumption:** ≤ 1mA
- **Engaged Current Consumption:** ≥ 3mA
- **Temperature**: -13 to 212°F

ER 52-5 Wiring



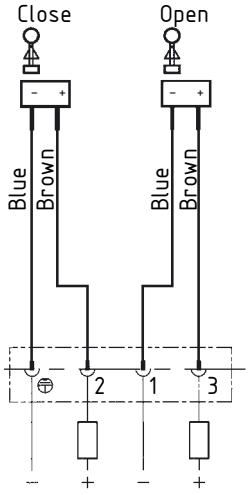
ER 52-5

Valve Size: ½" - 2" (d20 - d63)

ER 53-5

- **Valve Size:** 2½" - 6" (d75 - d160)

ER 53-5 Wiring



Explosion-Proof Switch Technical Data

ER 52-6

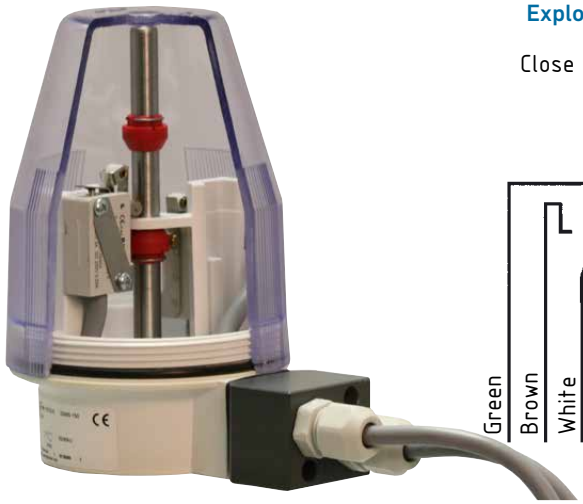
- **Valve Size:** 2½" - 6" (d75 - d160)

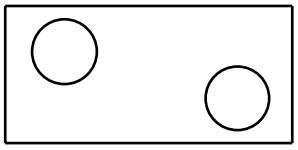
ER 53-6

Valve Size: ½" - 2" (d20 - d63)

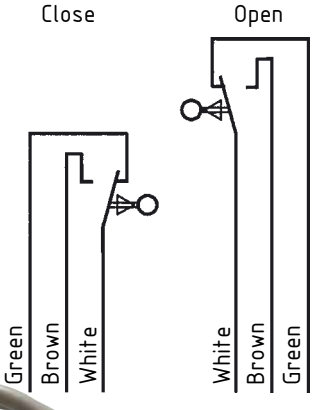
ER 52-6, ER 53-6

- **Switch:** BARTEC Miniature Limit Switch
- **ATEX Explosion Protection:** II2G Ex d IIC T6, T5 Gb
- **ATEX Certification:** EPS 14 ATEX 1689X
- **IECEx Explosion Protection:** Ex d IIC Gb T6, T5
- **IECEx Certifcation:** IECEx EPS 140039X
- **Limit Switch Protection Class:** IP54
- **Lead Length:** 75 inches
- **Contact:** Ag
- **Max Voltage:** 250VAC
- **Max Current:** 5A
- **Temperature:** T5 max 194°F, T6 max 167°F



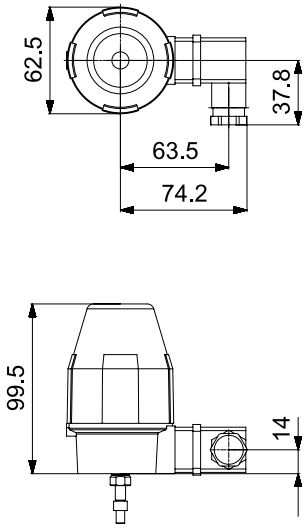


Explosion Proof Wiring

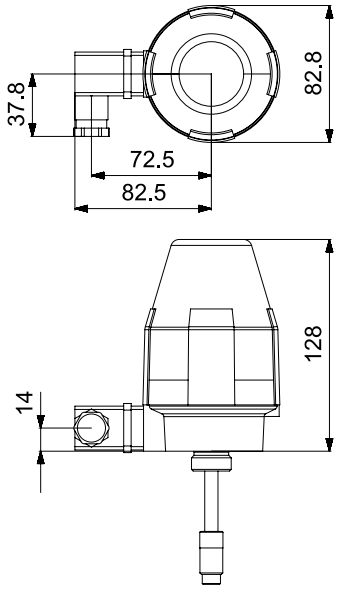


Dimensions

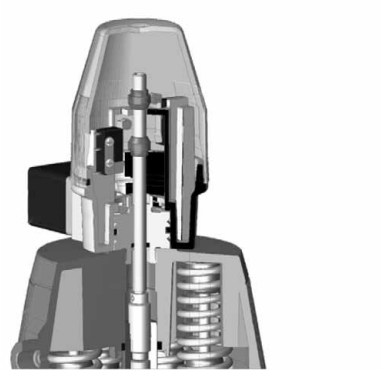
The following dimensions are shown in millimeters unless otherwise specified



ER 52



ER 53



Mounting

ER52/53 Linear Switch Kits come with several adapters to accommodate a range of valve sizes. There are two types of adapters included in these kits: one connects to the sensing pin and the other adapts to the threaded port on the top of the actuator. All DIASTAR actuated valves utilize an optical position indicator. The ER52/53 Linear Switch Kits are design to utilize either the position indicator pin (if used with a stroke limiter/manual override) or the position indicator connector inside the actuator (if directly mounted as shown above) to move the ER52/53 sensing pin in order to determine the valve's position. The sensing pin adapters change the length of the sensing pin to accommodate the varying stroke lengths of different size actuators. During assembly, please note that DIASTAR position indicators are all reverse threaded. The size of threaded port on the top of 5-Series DIASTAR actuators varies depending on size and type. The male threaded connection on the base of the ER52 has two sides, one with a larger threaded connection and one with a smaller threaded connection. It can be removed from the switch housing and rotated to fit the female threaded port on the actuator.

Important Note: ER52/53 Linear Switch Kits are specifically designed for and should only be used with GF's DIASTAR Valves. DIASTAR 604/605 and DIASTAR Six versions cannot accommodate these switches.