

The sensors mounted onto the cylinders detect the position of the piston by commutating an electric signal when approaching the magnetic field produced by the magnet incorporated in the piston itself. They are manufactured using two different technologies: electromechanical with Reed bulb; electronic with magneto-resistive effect (normally open with PNP output); upon request with NPN output. The first one with Reed bulb function both in d.c. and a.c.; the second ones, electronic type function only in d.c. 30V max. In both versions the active status is indicated by the lighting of a luminous diode.



| Characteristics                   | Type     | electronic                 | electromechanical      |                            |                            |  |
|-----------------------------------|----------|----------------------------|------------------------|----------------------------|----------------------------|--|
|                                   |          | DF-770<br>3 wires PNP N.O. | DF-220<br>2 wires N.O. | DF-330<br>3 wires PNP N.O. | DF-440<br>3 wires PNP N.C. | DF-520<br>3 wires PNP N.C.<br>more sensitive |
| Nominal voltage                   | V AC/DC  | 24V DC                     | 24V AC/DC              | 24V AC/DC                  | 24V AC/DC                  | 24V AC/DC                                    |
| Working voltage                   | V AC/DC  | 7...30V                    | 5...30V                | 5...30V                    | 5...30V                    | 5...30V                                      |
| Max. switching current            | mA       | 200                        | 120                    | 500                        | 500                        | 120  |
| Max. switching power              | W/VA     | 6                          | 3,6                    | 6                          | 6                          | 3,6  |
| Max. voltage drop                 | V AC/DC  | 0,7V                       | 2,8V                   | 0,1V                       | 0,1V                       | 2,8V   |
| Minimum magnetic field            | gauss    | 30                         | 60                     | 60                         | 60                         | 50   |
| Opening response time             | ms       | 0,08                       | < 0,5                  | < 0,5                      | < 0,5                      | < 0,5  |
| Closing response time             | ms       | 0,03                       | < 1                    | < 1                        | < 1                        | < 1  |
| Electric life with resistive load | Cicli    | >10 <sup>9</sup>           | >10 <sup>7</sup>       | >10 <sup>7</sup>           | >10 <sup>7</sup>           | >10 <sup>7</sup>                             |
| State indicator                   | Red      | LED                        | LED                    | LED                        | LED                        | LED  |
| Cable number and section          | mmq      | 3 x 0,14                   | 2 x 0,14               | 3 x 0,14                   | 3 x 0,14                   | 3 x 0,14                                     |
| Electric circuit (page 4)         | Type     | C                          | A                      | C                          | D                          | D  |
| Protection degree                 | DIN40050 | IP65                       |                        |                            |                            |  |
| Working temperature               | °C       | - 20 + 80 °C               |                        |                            |                            |  |

### Part numbers

| - Sensor with cable 3 m                      | DF-770     | DF-220    | DF-330    | DF-440    | DF-520    |
|--|------------|-----------|-----------|-----------|-----------|
| - Sensor with cable 20 cm male connector M08 | DF-770M08  | DF-220M08 | DF-330M08 | DF-440M08 | DF-520M08 |
| - Sensor with cable 20 cm male connector M12 | DF-770M12  | DF-220M12 | DF-330M12 | DF-440M12 | DF-520M12 |
| - Cable extension M08 3 m 3 poles            | DHF-033M08 |           |           |           |           |
| - Cable extension M08 5 m 3 poles            | DHF-053M08 |           |           |           |           |
| - Cable extension M12 3 m 3 poles            | DHF-033M12 |           |           |           |           |
| - Cable extension M12 5 m 3 poles            | DHF-053M12 |           |           |           |           |
| - Cable clamping                             | DF -001    |           |           |           |           |

**For the use of 3-pole cable extensions M08 and M12 with magnetic sensor DF-220, DF-220M08, DF-220M12 exclude blue wire when connecting.**

**Note:** observe polarity for d.c. use, avoid that magnetic fields affect the sensor, for cables with length exceeding 10 m insert filter KM-008200, for use with inductive loads foresee suitable filters on the load itself.