



# Limit switches

## FCR – FGR series

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TECHNO-CONTROL EQUIPMENT



Rotary control switches with 300mm rods from 3 up to 5 positions. Control switches with rotary gear from 12 up to 200 rpm with 4 or 6 micro switches.

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# Rotary limit switches

## FCR series for control circuits

IP65

# Rotary gear limit switches

## FGR series for control circuits

IP65



TECHNO-CONTROL EQUIPMENT

### GENERAL CHARACTERISTICS

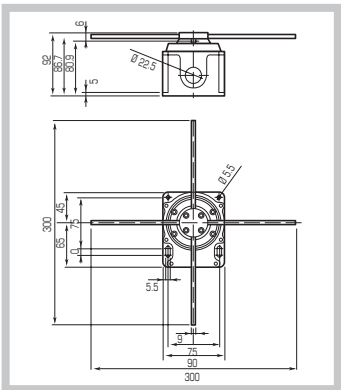
- Self extinguishing thermoplastic housing VO UL94
- IP65 protection rating according to IEC/EN 60529
- Ambient temperature: operating -25° +55° C storage -30° +70° C
- Material class II, Pollution class 3 according to IEC/EN60947
- Slow break positive opening double gap contacts
- No.1 cable entry 22,5 Ø

### ELECTRICAL CHARACTERISTICS

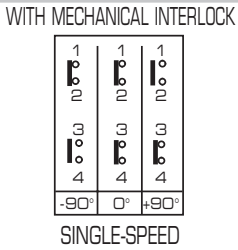
|   |                  |
|---|------------------|
| Comply with IEC/EN60947-3, UL508                          |                  |
| Certifications IMQ, CCC, GOST, UL                         |                  |
| Rated insulation voltage Ui                               | V 690            |
| Rated impulse withstand voltage Uimp                      | kV 4             |
| Rated thermal current Ith                                 | A 16             |
| Frequency   | Hz 50/60         |
| Rated operating current:                                  |                  |
| AC21A - AC22A   | 690V A 16        |
| AC23A 3-phase - 3-pole                                    | 230V A/kW 13/4   |
|   | 400V A/kW 13/7,5 |
| Rated short circuit withstand current (gG 20A-690V fuses) | kA 5             |



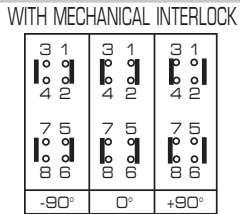
| DESCRIPTION                           | REFERENCE NO. | WIRING DIAGRAM No. |
|---------------------------------------|---------------|--------------------|
| <b>For single-speed motor control</b> |               |                    |
| 3-position with mechanical interlock  | FCR001        | 1                  |
| 3-position with mechanical interlock  | FCR002        | 2                  |
| 4-position rotary                     | FCR003        | 3                  |
| 4-position rotary                     | FCR004        | 4                  |
| 4-position rotary                     | FCR005        | 5                  |
| <b>For two-speed motor control</b>    |               |                    |
| 4-position with mechanical interlock  | FCR006        | 6                  |



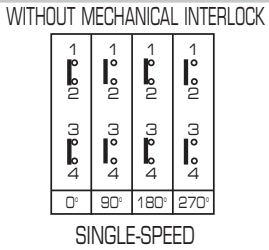
WIRING DIAGRAM 1



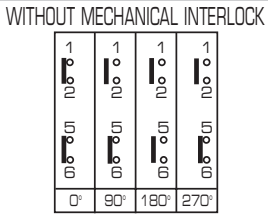
WIRING DIAGRAM 2



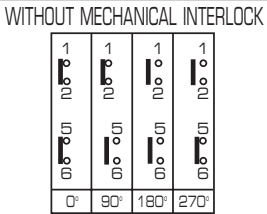
WIRING DIAGRAM 3



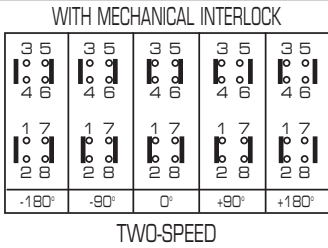
WIRING DIAGRAM 4



WIRING DIAGRAM 5



WIRING DIAGRAM 6



### GENERAL CHARACTERISTICS

- This range is aimed at the control of rotating parts: crane rope drums, machinery, etc. They are supplied with a micro ,adjustable by a tool, to set the contacts to open and close independent from one another according to the different requirements. The FGR..B version is supplied with a coaxial shaft to use an encoder.
- Die cast main body with self extinguishing thermoplastic cover VO
- IP65 protection rating according to IEC/EN 60529
- Galvanised steel worm gear with ball bearings
- PA control cams with central stainless steel shaft mounted on ball bearings
- Cams and micrometric adjustment screws in PA
- Maximum number of operating contacts 6 (6 cams)
- No.2 cable entries with M20 cable glands
- Σ Operating temperature -25° C + 70° C

### ELECTRICAL CHARACTERISTICS

- Comply with IEC/EN 61058-1, UL 1054
- Certifications IMQ, CCC, GOST, UL Recognized
- 1NC+1NO changeover switches (C form)
- Snap action contacts with positive opening NC contact
- Self cleaning silver alloy contacts
- Rated insulation voltage Ui 250V
- Rated thermal current 8A
- Rated operating current:  
resistive load le 8A-250V ac  
inductive load le 3A-250V ac
- IEC/EN 61058-1 8(3)A-250V ac, UL 1054 8A-250Vac

### STANDARD VERSION

| CAM/MOTORSHAFT<br>REV RATIO | REFERENCE NO.         |                       | WEIGHT gr | MIN. PACK QTY. |
|-----------------------------|-----------------------|-----------------------|-----------|----------------|
|                             | With 4 micro switches | With 6 micro switches |           |                |
| 1/12                        | FGR2006               | FGR20066              | 1.100     | 1              |
| 1/33                        | FGR2007               | FGR20076              | 1.100     | 1              |
| 1/50                        | FGR2008               | FGR20086              | 1.100     | 1              |
| 1/100                       | FGR2009               | FGR20096              | 1.100     | 1              |
| 1/200                       | FGR2010               | FGR20106              | 1.100     | 1              |

### COAXIAL SHAFT VERSION

| CAM/MOTORSHAFT<br>REV RATIO | REFERENCE NO.         |                       | WEIGHT gr | MIN. PACK QTY. |
|-----------------------------|-----------------------|-----------------------|-----------|----------------|
|                             | With 4 micro switches | With 6 micro switches |           |                |
| 1/12                        | FGR2006B              | FGR2006B6             | 1.200     | 1              |
| 1/33                        | FGR2007B              | FGR2007B6             | 1.200     | 1              |
| 1/50                        | FGR2008B              | FGR2008B6             | 1.200     | 1              |
| 1/100                       | FGR2009B              | FGR2009B6             | 1.200     | 1              |
| 1/200                       | FGR2010B              | FGR2010B6             | 1.200     | 1              |





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