

GF4C

ROTARY LIMIT SWITCH

PRODUCT DESCRIPTION

The rotary limit switch GF4C is used to control the movement of industrial machinery. It operates as an auxiliary controller of electrical motors through a power interface, such as a contactor or PLC. Suitable for heavy duty, its shaft is connected to the motor and, after a set number of revolutions, the cams operate the switches, thus starting the predetermined movement. A worm gear and a helical toothed gear combined with one or more pairs of straight toothed gears are used for the transmission of the movement from the input shaft to the output shaft.

Revolution ratios, ranging from 1:1 to 1:969, result from the use of different combinations of gear wheels between the input shaft and the output shaft, which is connected to the cams operating the switches.

Each output of the limit switch can be set with a different revolution ratio to allow for a diversified control of the machinery to meet special requirements.

Transmission and gear driving shafts are made of stainless steel to prevent oxidation and wear.

The gear wheels and the driving bushes are made of self-lubricating thermoplastic material, suitably chosen to reduce the wear to a minimum and to maintain the accuracy of the couplings over time.

Sintered bronze bushes are moulded into the base of the limit switch to optimise the shaft rotation and to prevent rubbing with plastic material.

Materials and components are wear resistant and protect the equipment against water and dust.

Each cam can be set with great accuracy thanks to the cam adjusting screws. The auxiliary switches are of a positive opening type. It is available with direct control switches for operating directly on the motor.

The cam-switch sets can be substituted for potentiometers suitable for the connection to electronic equipment.

The limit switch is available with a flange for direct coupling to the motor and it can be customised with labels and colours according to the customer's requirements.

GENERAL TECHNICAL SPECIFICATIONS

- Conformity to Community Directives: 2006/95/CE 2006/42/CE
- Conformity to Standards: EN 60204-1 EN 60947-1 EN 60947-5-1 EN 60529
- Storage ambient temperature: -40°C/+70°C
- Operational ambient temperature: -25°C/+70°C
- Protection degree: IP 65
- Insulation category: Class II
- Cable entry: cable clamp M20
- Markings and homologations: CE (UL^{us} limit switches available on request)

TECHNICAL SPECIFICATIONS OF THE MICROSWITCHES

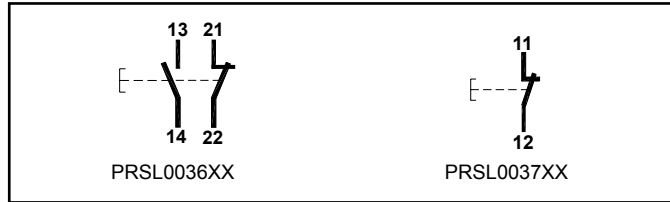
- Utilisation category: AC 15
- Rated operational current: 3 A
- Rated operational voltage: 250 V
- Rated thermal current: 10 A
- Rated insulation voltage: 300 V~
- Mechanical life: 1x10⁶ operations
- Terminal referencing: according to EN 50013
- Connections: screw-type terminals with self-lifting pads
- Wires: 1x2.5 mm², 2x1.5 mm²
(UL - (c)UL: use 60°C or 75°C copper (CU) conductor and wire size N° 16-18 AWG)
- Tightening torque: 0.8 Nm
- Markings and homologations: CE (UL^{us})

FEATURES OF THE SWITCHES

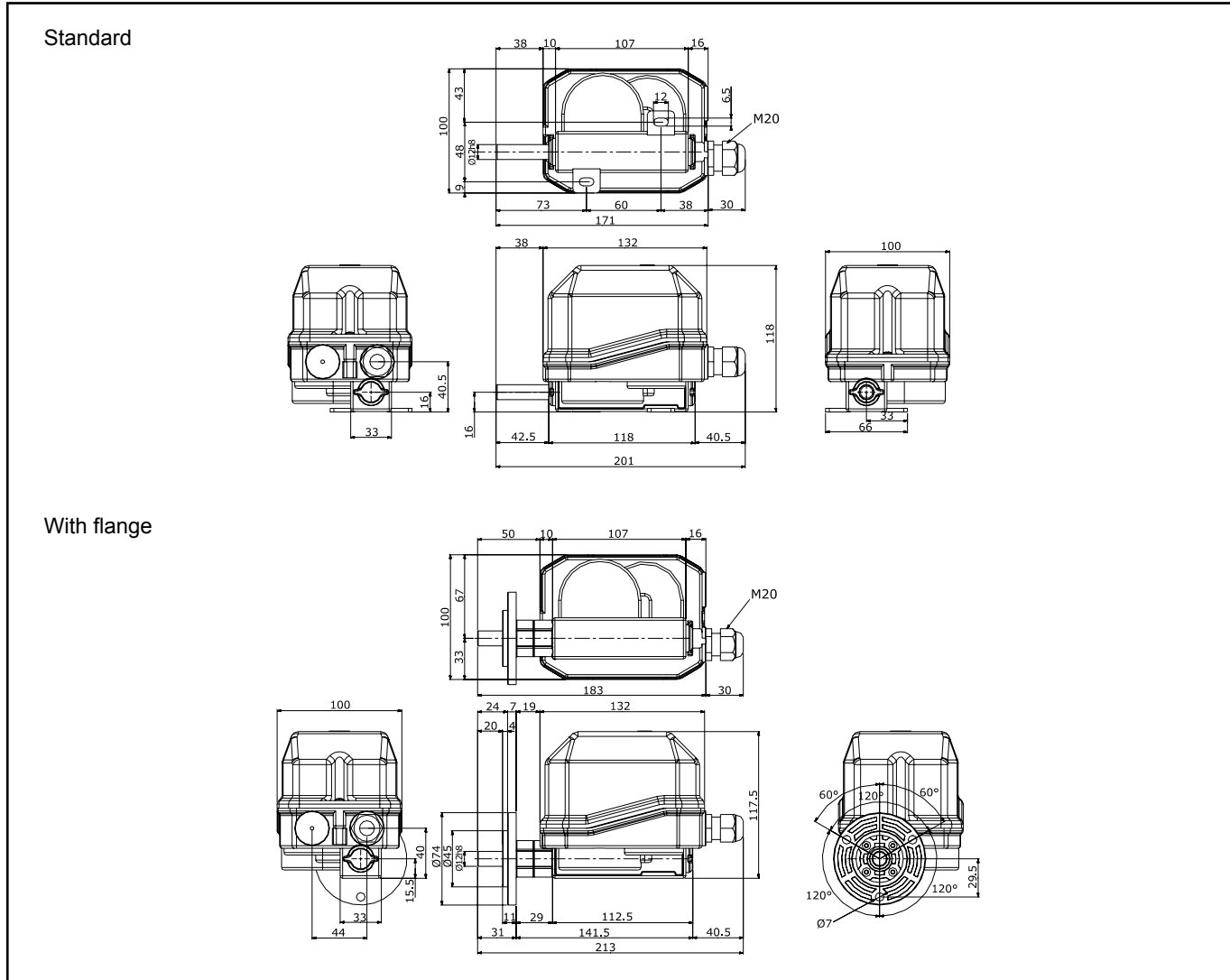
The snap action single switch PRSL0036XX has 1 NO + 1 NC change over contacts with 2 connecting terminals each.

The slow action single switch PRSL0037XX has 1 NC contact. All NC contacts are of the positive opening operation type.

The switches have the following reference for internal wiring.

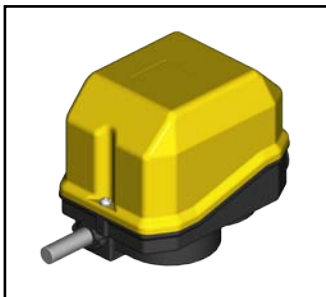


OVERALL DIMENSIONS

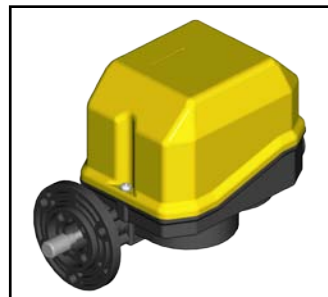


POSSIBLE ASSEMBLIES

Standard



With flange



With set of cams



With set of cams and potentiometer



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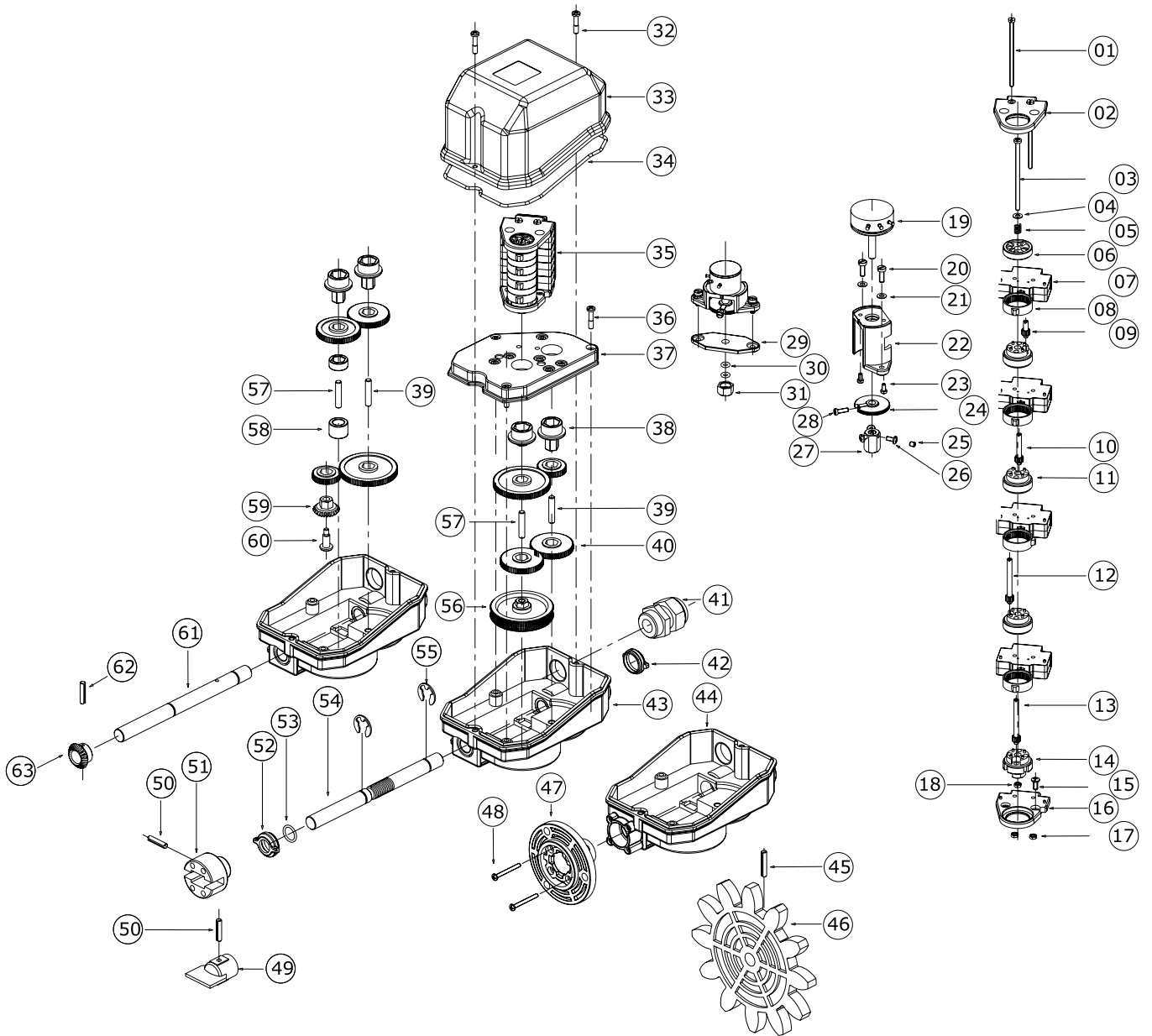
TER Tecno Elettrica Ravasi srl

Via Garibaldi 29/31 - 23885 Calco (LC) - Italy

Registered Office - via San Vigilio 2 - 23887 Olgiate Molgora (LC) - Italy

Tel. +39 0399911011 - Fax +39 0399910445 - E-mail: info@terworld.com

www.terworld.com



COMPONENTS

| Reference | Code | Description |
|-------------|--|--|
| 07 | PRSL0036XX PRSL0037XX | Snap action 1NO+1NC switch Slow action 1NC switch |
| 08 | PRSL7140PI PRSL7141PI PRSL7142PI PRSL7143PI PRSL7144PI | Pointed cam 60° sector cam 10 point cam 270° circular cam 180° cam |
| 19 | PRVV9020PE PRVV9025PE PRVV9035PE PRVV9030PE PRVV9031PE | Potentiometer Megatron 4.7 kΩ Potentiometer Megatron 10 kΩ Potentiometer Megatron 2.2 kΩ Potentiometer MCB 10 kΩ mechanical stop Potentiometer MCB 10 kΩ |
| 22 (+20+21) | PRSL0928PI PRSL0929PI PRSL0930PI PRSL0931PI | Small support for potentiometer with O-ring Large support for potentiometer Medium support for potentiometer Medium support for potentiometer |
| 24 (+28) | PRSL0909PI | Adjusting gear |
| 27 (+25) | PRSL0933PI | Fixed coupling for potentiometer 13mm |
| 27 (+26) | PRSL0932PI PRSL0934PI | Fixed coupling for potentiometer 33mm Fixed coupling for potentiometer 17mm |
| 29 | PRSL9409PI | Support plate for potentiometer with O-ring |
| 31 (+30) | PRSL0927PI | Bush for potentiometer |
| 40 | PRSL6598PI PRSL6599PI PRSL6600PI PRSL6601PI PRSL6602PI PRSL6603PI PRSL6604PI PRSL6605PI PRSL6606PI PRSL6607PI PRSL6608PI PRSL6609PI PRSL6611PI PRSL6612PI PRSL6613PI PRSL6614PI PRSL6615PI PRSL6616PI PRSL6617PI PRSL6618PI PRSL6619PI PRSL6620PI PRSL6621PI PRSL6622PI PRSL6623PI PRSL6624PI PRSL6625PI PRSL6626PI PRSL6627PI PRSL6628PI PRSL6629PI PRSL6630PI PRSL6631PI PRSL6632PI PRSL6633PI PRSL6634PI PRSL6635PI PRSL6636PI PRSL6637PI PRSL6638PI PRSL6639PI | Lateral gear wheel Z 35 Lateral gear wheel Z 37 Lateral gear wheel Z 36 Lateral gear wheel Z 38 Lateral gear wheel Z 40 Lateral gear wheel Z 42 Lateral gear wheel Z 44 Lateral gear wheel Z 46 Lateral gear wheel Z 48 Lateral gear wheel Z 50 Lateral gear wheel Z 52 Lateral gear wheel Z 54 Lateral gear wheel Z 56 Lateral gear wheel Z 58 Lateral gear wheel Z 60 Lateral gear wheel Z 62 Lateral gear wheel Z 64 Lateral gear wheel Z 66 Lateral gear wheel Z 68 Lateral gear wheel Z 70 Lateral gear wheel Z 72 Lateral gear wheel Z 74 Lateral gear wheel Z 76 Lateral gear wheel Z 78 Lateral gear wheel Z 80 Lateral gear wheel Z 82 Lateral gear wheel Z 84 Lateral gear wheel Z 86 Lateral gear wheel Z 88 Lateral gear wheel Z 90 Lateral gear wheel Z 92 Lateral gear wheel Z 94 Lateral gear wheel Z 96 Lateral gear wheel Z 98 Lateral gear wheel Z 100 Lateral gear wheel Z 102 Lateral gear wheel Z 104 Lateral gear wheel Z 106 Lateral gear wheel Z 108 Lateral gear wheel Z 107 Lateral gear wheel Z 109 |

| Reference | Code | Description |
|-----------|--|--|
| 46 (+45) | PRSL0911PI PRSL0912PI PRSL0913PI PRSL0914PI PRSL0915PI PRSL0916PI PRSL0917PI PRSL0918PI PRSL0944PI | Pinion gear M10 Z12 with pin Pinion gear M12 Z10 with pin Pinion gear M14 Z10 with pin Pinion gear M16 Z10 with pin Pinion gear M20 Z8 with pin Pinion gear M5 Z12 with pin Pinion gear M6 Z11 with pin Pinion gear M8 Z12 with pin Pinion gear M12 Z12 with pin |
| 47 (+48) | PRSL0947PI | Flange with pin |
| 49 (+50) | PRSL0919PI | Male coupling with pin |
| 51 (+50) | PRSL0920PI | Female coupling with pin |
| 54 | PRTO0065PE PRTO0054PE PRTO0076PE | Single-thread shaft Double-thread shaft Flexible shaft |
| 56 | PRSL6703PI | Central gear wheel Z 100 |

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

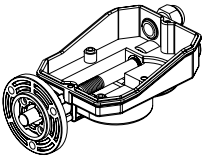



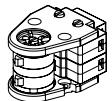
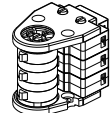
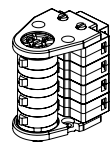
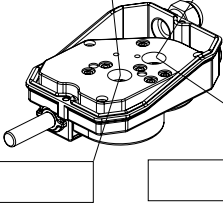
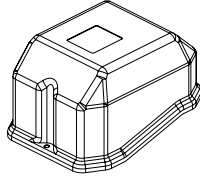
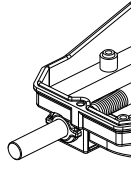
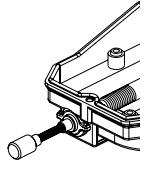
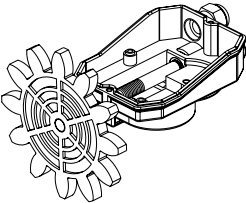
STANDARD VERSIONS

| Revolution ratio | Type of contact | 2 switches | 3 switches | 4 switches |
|------------------|-----------------|--------------------------------------|--------------------------------------|--------------------------------------|
| 1:1 | Snap Slow | PF0903 0001 0003 PF0903 0001 0004 | PF0903 0001 0002 PF0903 0001 0005 | PF0903 0001 0001 PF0903 0001 0006 |
| 1:5 | Snap Slow | PF0903 0005 0002 PF0903 0005 0004 | PF0903 0005 0003 PF0903 0005 0005 | PF0903 0005 0001 PF0903 0005 0006 |
| 1:10 | Snap Slow | PF0903 0010 0003 PF0903 0010 0005 | PF0903 0010 0004 PF0903 0010 0006 | PF0903 0010 0002 PF0903 0010 0007 |
| 1:15 | Snap Slow | PF0903 0015 0004 PF0903 0015 0007 | PF0903 0015 0003 PF0903 0015 0008 | PF0903 0015 0002 PF0903 0015 0001 |
| 1:20 | Snap Slow | PF0903 0020 0002 PF0903 0020 0004 | PF0903 0020 0003 PF0903 0020 0005 | PF0903 0020 0001 PF0903 0020 0006 |
| 1:25 | Snap Slow | PF0903 0025 0006 PF0903 0025 0007 | PF0903 0025 0003 PF0903 0025 0008 | PF0903 0025 0001 PF0903 0025 0002 |
| 1:50 | Snap Slow | PF0903 0050 0002 PF0903 0050 0028 | PF0903 0050 0003 PF0903 0050 0017 | PF0903 0050 0006 PF0903 0050 0007 |
| 1:75 | Snap Slow | PF0903 0075 0007 PF0903 0075 0009 | PF0903 0075 0008 PF0903 0075 0010 | PF0903 0075 0004 PF0903 0075 0006 |
| 1:100 | Snap Slow | PF0903 0100 0002 PF0903 0100 0001 | PF0903 0100 0006 PF0903 0100 0013 | PF0903 0100 0003 PF0903 0100 0004 |
| 1:150 | Snap Slow | PF0903 0150 0002 PF0903 0150 0001 | PF0903 0150 0011 PF0903 0150 0009 | PF0903 0150 0008 PF0903 0150 0003 |
| 1:200 | Snap Slow | PF0903 0200 0006 PF0903 0200 0007 | PF0903 0200 0002 PF0903 0200 0004 | PF0903 0200 0003 PF0903 0200 0008 |
| 1:250 | Snap Slow | PF0903 0250 0003 PF0903 0250 0009 | PF0903 0250 0007 PF0903 0250 0010 | PF0903 0250 0008 PF0903 0250 0011 |
| 1:300 | Snap Slow | PF0903 0300 0004 PF0903 0300 0008 | PF0903 0300 0006 PF0903 0300 0009 | PF0903 0300 0007 PF0903 0300 0010 |

Standard limit switches are equipped with 2,3 or 4 snap or slow action switches and with pointed cams PRSL7140PI. Other assemblies and revolution ratios are available on request. It is possible to assemble up to 6 switches. Maximum revolution ratio 1:969.

REMARKS

REQUEST FORM FOR NON STANDARD LIMIT SWITCHES

| | | |
|--|--|---|
| <p>Cams</p> <p>1  PRSL7140PI</p> <p>2  PRSL7141PI</p> <p>3  PRSL7142PI</p> <p>4  PRSL7143PI</p> <p>5  PRSL7144PI</p> <hr/> <p>Switches</p> <p>1 PRSL0036XX Snap action</p> <p>2 PRSL0037XX Slow action</p> <hr/> <p>Potentiometers</p> <p>1 PRVV9020PE Megatron 4.7 kΩ</p> <p>2 PRVV9025PE Megatron 10 kΩ</p> <p>3 PRVV9035PE Megatron 2.2 kΩ</p> <p>4 PRVV9030PE MCB 10 kΩ mechanical stop</p> <p>5 PRVV9031PE MCB 10 kΩ</p> <hr/> <p>Male coupling</p> <p><input type="checkbox"/></p>  <hr/> <p>Female coupling</p> <p><input type="checkbox"/></p>  <hr/> <p>Flange</p> <p><input type="checkbox"/></p>  | <p>Potentiometer</p>  <p>O-ring coupling</p>  <p>Fixed coupling</p>     <p>Revolution ratio</p>  | <p>Cover</p> <p><input type="checkbox"/></p>  <hr/> <p>Standard shaft</p> <p><input type="checkbox"/></p>  <hr/> <p>Flexible shaft</p> <p><input type="checkbox"/></p>  <hr/> <p>Pinion gear</p>  <p><input type="checkbox"/> PRSL0911PI M10 Z12</p> <p><input type="checkbox"/> PRSL0912PI M12 Z10</p> <p><input type="checkbox"/> PRSL0913PI M14 Z10</p> <p><input type="checkbox"/> PRSL0914PI M16 Z10</p> <p><input type="checkbox"/> PRSL0915PI M20 Z8</p> <p><input type="checkbox"/> PRSL0916PI M5 Z12</p> <p><input type="checkbox"/> PRSL0917PI M6 Z11</p> <p><input type="checkbox"/> PRSL0918PI M8 Z12</p> <p><input type="checkbox"/> PRSL0944PI M12 Z12</p> |
|--|--|---|

Instructions

- Mark the boxes corresponding to the components required (coupling, flange, cover, shaft, pinion gear).
- Write the numbers corresponding to the **cams**, the **switches** and the **potentiometers** required.
- When a potentiometer is required, mark the box corresponding to the type of **coupling** needed.
- Write the **revolution ratio** required for each output.

Remarks

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