numatics®

GR Series
Adjustable Angular Gripper

www.numatics.com
# GR90 Series Angular Grippers

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Features &amp; Benefits</td>
<td>3</td>
</tr>
<tr>
<td>How to Order</td>
<td>3</td>
</tr>
<tr>
<td>Dimensions</td>
<td>4</td>
</tr>
<tr>
<td>Technical Specifications</td>
<td>5</td>
</tr>
<tr>
<td>Switch Information</td>
<td>6</td>
</tr>
<tr>
<td>Quick Disconnect Cables</td>
<td>7</td>
</tr>
</tbody>
</table>
GR90-Series Angular Grippers

The GR90-Series has a double acting piston attached to a cross bar by a connecting rod. The linear movement of the piston is transformed into angular movement of the jaws through a double toggle link mechanism.

A. Body:
Hardcoat anodized with PTFE, reduced friction, reduced wear. Front and side ports standard.

B. Jaws:
Hardened alloy steel. Keyway slot for tooling location. 180° jaw motion.

C. Locking Adjustment Screw:
Jaw rotations can be adjusted from 0-90° to be custom fit to each application.

How to Order

<table>
<thead>
<tr>
<th>Seal Type</th>
<th>Sensing Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>= Buna-N Seals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GR90</th>
<th>1</th>
<th>6</th>
<th>D</th>
<th>X</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Special Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>X = Standard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sensing Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = Single Position Open</td>
</tr>
<tr>
<td>B = Single Position Closed</td>
</tr>
<tr>
<td>C = Two Position Sensing</td>
</tr>
<tr>
<td>D = No Sensing</td>
</tr>
</tbody>
</table>

Prox switches are 4 mm diameter.

When ordering additional switches & Seal Kits:

<table>
<thead>
<tr>
<th>Sensing Kits Standard Cord Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hall Effect - PNP Sourcing</td>
</tr>
<tr>
<td>Hall Effect - NPN Sinking</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sensing Kits Quick Disconnect Cord Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hall Effect - PNP Sourcing</td>
</tr>
<tr>
<td>Hall Effect - NPN Sinking</td>
</tr>
<tr>
<td>90° 5 meter cable</td>
</tr>
<tr>
<td>Straight 5 meter cable</td>
</tr>
</tbody>
</table>
Angular Gripper

GR90 Dimensions

Dimensions: Inches

#10-32 X 5/16" DEEP (4) HOLES

1.142 THRD HOLES
1.1420 DOWELS

.571 THRD HOLES
.5710 DOWELS

.364
.5610

.364

1.102
7.50
.571
.3750

REAMED FOR 1/8" DOWELS SLIP FIT (2) PLACES

.354 THRD HOLES
.3540 DOWELS

#10-32 AIR PORTS TYP. (4) PLACES

.354
.230

.743

90°

STROKE ADJ.

#8-32 THRU TYP. (4) PLACES

.315 x.001
.470 x.001

.315 x.001
.470 x.001

SENSOR BRKTS. [OPTIONAL]

.315
.315

1.255

2.819

2.737

2.250

2.643

0.157

Information subject to change without notice. For ordering information or regarding your local sales office visit www.numatics.com.
GR90-Series Gripper Performance Data

Gripper Specifications

<table>
<thead>
<tr>
<th></th>
<th>GR90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grip Force</td>
<td></td>
</tr>
<tr>
<td>open @ 100 PSI</td>
<td>55 lbs</td>
</tr>
<tr>
<td>close @ 100 PSI</td>
<td>52 lbs</td>
</tr>
<tr>
<td>Displacement</td>
<td>0.46 cu. in.</td>
</tr>
<tr>
<td>Max Operating Pressure</td>
<td>120 PSI</td>
</tr>
<tr>
<td>Side Play</td>
<td>±0.001</td>
</tr>
<tr>
<td>Weight</td>
<td>7 oz.</td>
</tr>
</tbody>
</table>

Recommended Maximum Load Ratings

| Max Load Position A | 30 in-lb | 3.4 Nm |
| Max Load Position B | 30 in-lb | 3.4 Nm |
| Max Load Position C | 40 lbs.  | 18Kgf |

GR90 Series Gripper

<table>
<thead>
<tr>
<th>Bore</th>
<th>Bracket P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>GR90</td>
<td>CT-500</td>
</tr>
</tbody>
</table>

Sensor Description

<table>
<thead>
<tr>
<th>Sensor Description</th>
<th>Standard Cord Set</th>
<th>Quick Disconnect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prox PNP</td>
<td>PROX-4FL2-P</td>
<td>PROX-4QDS-P</td>
</tr>
<tr>
<td>Prox NPN</td>
<td>PROX-4FL2-N</td>
<td>Not Available</td>
</tr>
</tbody>
</table>
Angular Gripper

Prox Switch (NPN NO) Flying Lead - PROX-4FL2-N
Prox Switch (PNP NO) Flying Lead - PROX-4FL2-P

Electrical Design
Output
Operating Voltage
Current Rating
Short Circuit Protection
Overload Protection
Reverse Polarity Protection
Voltage Drop
Current Consumption
Real Sensing Range
Switching Frequency
Ambient Temperature
Protection
Switch-Point Drift
Hysteresis
Operating Distance
Correction Factor
Housing Material
Function Display Switching Status
Connection

3-Wire DC PNP/NPN
Normally Open
10-36 VDC
100 mA
Yes (Non-Latching)
Yes
< 2.5V
< 15 mA @ 24V
.8mm ± 10%
> 2000 Hz
-25°C to 70°C
IP 65, III
-10 - 10% OF Sr
1 - 15% OF Sr
0 - 65mm
Mild Steel=1, Stainless Steel=.7,
Brass=.5, Alum.=.4,Copper=.3
Housing; Stainless Steel: POM
Yellow LED
PVC Cable, 2m, 3 x .14mm2

Prox Switch (PNP NO), 8 mm connector - PROX-4QDS-P

Electrical Design
Output
Operating Voltage
Current Rating
Short Circuit Protection
Overload Protection
Reverse Polarity Protection
Voltage Drop
Current Consumption
Real Sensing Range
Switching Frequency
Ambient Temperature
Protection
Switch-Point Drift
Hysteresis
Operating Distance
Correction Factor
Housing Material
Function Display Switching Status
Connection
Remarks
Agency Approvals

3-Wire DC PNP
Normally Open
10-36 VDC
100 mA
Yes (Non-Latching)
Yes
< 2.5V
< 15 mA @ 24V
.8mm ± 10%
> 2000 Hz
-25°C to 70°C
IP 65, III
-10 - 10% OF Sr
1 - 15% OF Sr
0 - 65mm
Mild Steel=1, Stainless Steel=.7,
Brass=.5, Alum.=.4,Copper=.3
Housing; Stainless Steel: POM
Red LED (4 X 90°)
M8 Connector
cULus - Class 2 Source
Required
Mounting Clamp
Quick Disconnect Cables

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Type</th>
<th>Operating Voltage</th>
<th>Current Rating</th>
<th>Cable Material</th>
<th>Protection</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>PX CST</td>
<td>Straight 5 m Cable (3 x 26 Gauge wire)</td>
<td>60 AC/75 DC</td>
<td>3 A</td>
<td>PUR</td>
<td>IP 68, III</td>
<td>M8</td>
</tr>
<tr>
<td>PX C90</td>
<td>90° 5 m Cable (3 x 26 Gauge wire)</td>
<td>60 AC/75 DC</td>
<td>3 A</td>
<td>PUR</td>
<td>IP 68, III</td>
<td>M8</td>
</tr>
</tbody>
</table>