

Grippers

| | Series | Type | Grip force max. | mm or degrees of stroke | Spring open | Spring close | Clean room | Page number |
|---|-------------|----------|-----------------|-------------------------|-------------|--------------|------------|-------------|
|  | P5GA | Angular | 13N to 194N | -10° to 30° | No | No | No | B282 |
|  | P5GB | Parallel | 16N to 130N | 6mm to 16mm | No | No | No | B284 |
|  | P5GV | Parallel | 36N | 3.2mm to 6.3mm | No | No | Yes | B286 |
|  | P5GR | Parallel | 120N to 458N | 6.4mm to 38.1mm | No | Yes | Yes | B288 |
|  | P5GU | Parallel | 116N to 160N | 6.5mm to 25.4mm | No | No | Yes | B291 |
|  | P5GN | Parallel | 62N to 445N | 1.6mm to 9.5mm | No | No | Yes | B294 |
|  | P5GM | Parallel | 62N to 445N | 4.8mm to 25.4mm | No | No | Yes | B297 |
|  | P5GS | Parallel | 222N to 800N | 19.1mm to 73.5mm | No | No | No | B300 |
|  | P5GT | Parallel | 178N to 2669N | 6.4mm to 50.8mm | No | No | No | B303 |
|  | P5GP | Electric | 111N | 0mm to 25mm | No | No | No | B306 |
|  | P5GQ | Electric | 445N to 1334N | 10mm to 20mm | No | No | No | B308 |
|  | P5GW | 3-Jaw | 682N to 44354N | 4.0mm to 35mm | No | Yes | Yes | B310 |

B

Automation Products
 Actuator Products

Grippers

Slide Tables

Rotary Tables

Escapements

Sensors

Fittings

P5GP Electric Gripper Series

- One piece, lightweight aircraft quality aluminum body ensures product accuracy
- The body and jaws are hard-coat anodized to 60 RC with PTFE impregnation
- Ridged design and full body support of the jaws allows for long finger lengths
- Versatile mounting on top, side front and back of body.
- IP54 rating for tough application environments
- Slip fit dowel pin holes located in body and jaws for precision mounting
- Precision rack and pinion drive components for smooth actuation. Zero backlash while gripping ensures excellent repeatability and accuracy.
- Built in electronics, no external control board needed
- Magnetic piston standard



Operating information

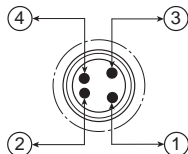
| | |
|-------------------------------|-----------------------------|
| Voltage: | 24VDC |
| Power Req. @ 100% Duty Cycle: | 4.2 Watts |
| Current - Peak: | 1.5 Amps Max. |
| Current - Continuous: | 0.175 Amps |
| Temperature range: | 5° to 60° C (41° to 140° F) |

Ordering Information: P5GP Electric Gripper Series

| Function | Stroke (mm) | Grip force (N) | Accuracy +/- mm | Repeatability +/-mm | Weight (kg) | Part number |
|----------|-------------|----------------|-----------------|---------------------|-------------|------------------------|
| Electric | 25 | 111 | 0.051 | 0.025 | 0.53 | P5GP-000ESX025B |

Sensor part numbers: Page 330.

Electrical Interface



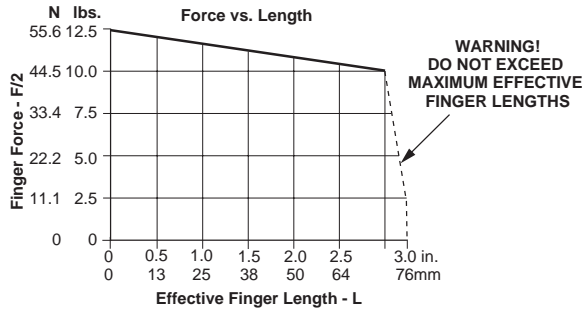
Pin Out (Looking Into Header Connector On Gripper)

- 1 Brown (+ 24 VDC)
- 2 White (Open Gripper) +24 VDC = Active
- 3 Blue (Ground)
- 4 Black (Close Gripper) +24 VDC = Active

4-Wire Power & Signal Cable: P8S-CABL-046

Most popular.

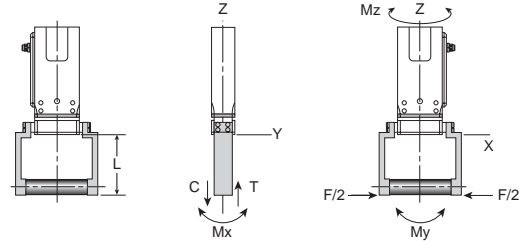
Loading information - P5GP-000



Loading capacity† - P5GP Electric Gripper

| | Static (metric) |
|-----------------------|-----------------|
| Maximum tensile T | 10 N |
| Maximum compressive C | 10 N |
| Maximum moment Mx | 14 Nm |
| Maximum moment My | 17 Nm |
| Maximum moment Mz | 14 Nm |

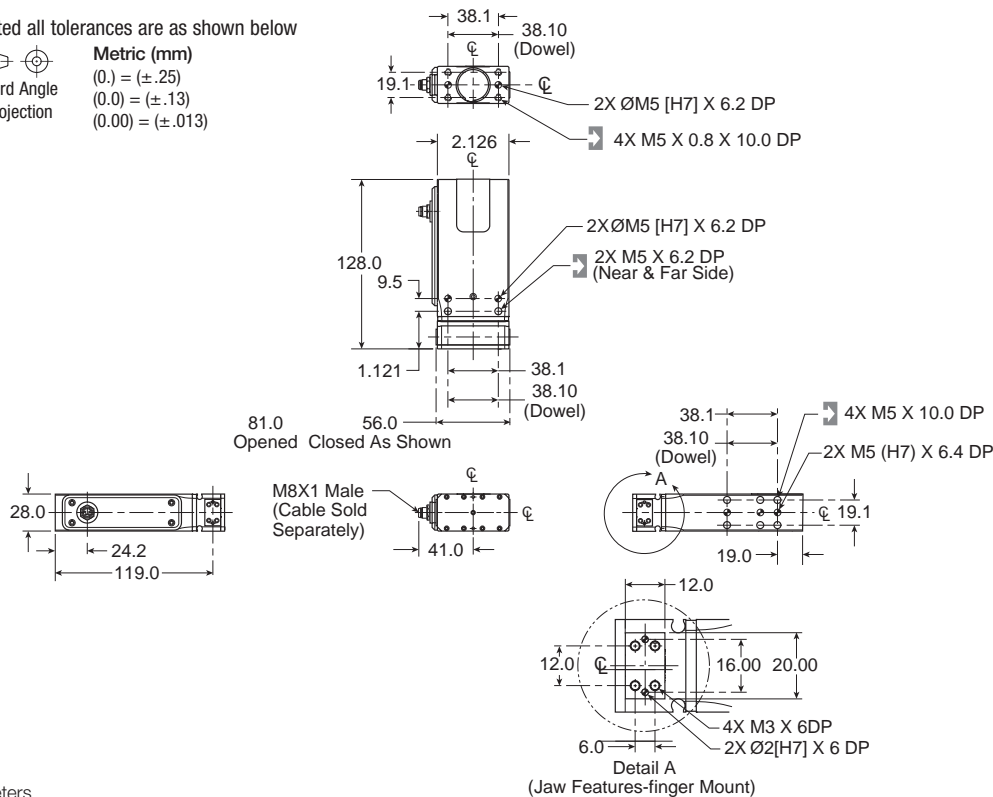
† Capacities are per set of jaws and are not simultaneous



Dimensions: P5GP Electric Gripper Series

Unless otherwise noted all tolerances are as shown below

- ⌀ Dimensions are symmetrical about centerline
- Third Angle Projection
- Metric (mm)
 - (0.) = (±.25)
 - (0.0) = (±.13)
 - (0.00) = (±.013)



Dimensions in millimeters

B

Automation Products
 Actuator Products

Grippers

Slide Tables

Rotary Tables

Escapements

Sensors

Fittings

Sensors

Magnetic

| Series | PNP with quick disconnect M8 | NPN with quick disconnect M8 | PNP with quick disconnect (90 degrees) M8 | NPN with quick Disconnect (90 Degrees) M8 | Page |
|--------|------------------------------|------------------------------|---|---|------|
| P5GM | P8S-HHSP-017 | P8S-HHSN-017 | P8S-HHSP-011 | P8S-HISN-011 | B332 |
| P5GN | P8S-HHSP-017 | P8S-HHSN-017 | P8S-HHSP-011 | P8S-HISN-011 | B332 |
| P5GP | P8S-HHSP-017 | P8S-HHSN-017 | NA | NA | B332 |
| P5GQ | P8S-HHSP-017 | P8S-HHSN-017 | NA | NA | B332 |
| P5GR | P8S-HHSP-017 | P8S-HHSN-017 | P8S-HHSP-011 | P8S-HISN-011 | B332 |
| P5GS | P8S-HHSP-017 | P8S-HHSN-017 | P8S-HHSP-011 | P8S-HISN-011 | B332 |
| P5GT | NA | NA | NA | NA | |
| P5GU | P8S-HHSP-017 | P8S-HHSN-017 | NA | NA | B332 |
| P5GV | NA | NA | NA | NA | B332 |
| P5GW | P8S-HHSP-017 | P8S-HHSN-017 | P8S-HHSP-011 | P8S-HISN-011 | B332 |
| P5MD | P8S-HHSP-017 | P8S-HHSN-017 | NA | NA | B332 |

Inductive

| Series | PNP M8 disconnent | NPN M8 disconnect | PNP M12 disconnent | NPN M12 disconnect | Inductive sensor mounting kit | Page |
|----------|---------------------|---------------------|---------------------|---------------------|-------------------------------|------|
| P5GR-010 | P8S-HISP-014 | P8S-HISN-014 | NA | NA | P8S-HSMK-119 | B333 |
| P5GR-014 | | | | | P8S-HSMK-119 | |
| P5GR-021 | | | | | P8S-HSMK-120 | |
| P5GS-016 | P8S-HISP-019 | P8S-HISN-019 | NA | NA | P8S-HSMK-116 | |
| P5GS-024 | | | | | P8S-HSMK-117 | |
| P5GS-032 | | | | | P8S-HSMK-118 | |
| P5GT-025 | P8S-HISP-019 | P8S-HISN-019 | NA | NA | P8S-HSMK-003 | |
| P5GT-025 | | | | | P8S-HSMK-003 | |
| P5GT-032 | | | | | P8S-HSMK-003 | |
| P5GT-046 | P8S-HISP-011 | P8S-HISN-011 | NA | NA | P8S-HSMK-072 | B332 |
| P5GT-064 | | | | | P8S-HSMK-072 | |
| P5GT-089 | | | | | P8S-HSMK-073 | |
| P5GW-072 | P8S-HISP-011 | P8S-HISN-011 | NA | NA | NA | B332 |
| P5GW-95 | | | | | NA | |
| P5GW-120 | | | | | NA | |
| P5GW-156 | NA | NA | P8S-HISN-017 | P8S-HISP-017 | NA | B333 |
| P5GW-220 | | | | | NA | |

Sensors for Economy Grippers, Slide Tables, Rotary Tables

| Series | Reed switch 5-120 V AC/DC | Reed switch 5-120 V AC/DC M8 | NPN 5-30 VDC | NPN 5-30 VDC M8 | PNP 5-30 VDC | PNP 5-30 VDC M8 | Page |
|--------|---------------------------|------------------------------|------------------|------------------|------------------|------------------|------|
| P5SS | P8S-ERFXS | P8S-ERSUS | P8S-ENFXS | P8S-ENSUS | P8S-EPFXS | P8S-EPSUS | B331 |
| P5GA | P8S-ERFXS | P8S-ERSUS | P8S-ENFXS | P8S-ENSUS | P8S-EPFXS | P8S-EPSUS | B331 |
| P5GB | P8S-ERFXS | P8S-ERSUS | P8S-ENFXS | P8S-ENSUS | P8S-EPFXS | P8S-EPSUS | B331 |
| P5RS | P8S-FRFXS | P8S-FRSUS | P8S-FNFXS | P8S-FNSUS | P8S-FPFXS | P8S-FPSUS | B331 |

Cables

| 2 meter cable M8 | 5 meter cable M8 | 2 meter cable M12 | 5 meter cable M12 |
|---------------------|---------------------|---------------------|---------------------|
| P8S-CABL-010 | P8S-CABL-013 | P8S-CABL-014 | P8S-CABL-018 |



B Automation Products
 Actuator Products
 Grippers
 Slide Tables
 Rotary Tables
 Escapements
 Sensors
 Fittings

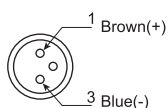
| Model | P8S-FRFXS P8S-FRSUS (M8) | P8S-FNFXS | P8S-FPFXS |
|--------------------------|-------------------------------|--|----------------------|
| Wiring method | 2 wire | 3 wire | |
| Switching logic | SPST normally open | Solid state output, normally open | |
| Switch type | Reed switch | NPN current sinking | PNP current sourcing |
| Operating voltage | 5 to 120 V DC/AC | 5 to 30 VDC | |
| Switching voltage | 100 mA max. | 200 mA max. | |
| Contact rating | 10 W max. | 6 W max. | |
| Current consumption | — | 8 mA @ 24 V max. (Switch active) | |
| Voltage drop | 3.5 V max. | 1 V @ 200 mA max. | |
| Leakage current | — | 0.01 mA max. | |
| Indicator | Red LED | Red LED | Green LED |
| Cable | 2.8 Ø, 2C | 2.8 Ø, 3C | |
| Magnet frequency (1) | 60 Gauss | 40 Gauss | |
| Temperature range | -10°C to 70°C (14°F to 158°F) | | |
| Shock (2) | 30 G | 50 G | |
| Vibration (3) | 9 G | | |
| Enclosure classification | IEC 529, IP67 | | |
| Protection circuit | None | Power source reverse polarity; surge suppression | |
| Connect diagram | | | |

- (1) Measuring standard target: Ø 15.5 x Ø 8 x 5t (Anisotropy rubber magnet).
 (2) Sine wave / X.Y.Z 3 directions / 3 times each direction / 11ms each time.
 (3) Double amplitude 1.5 mm / 10 Hz -55 Hz-10 Hz (Sweep 1min / X.Y.Z. 3 directions / 1 hour each time.

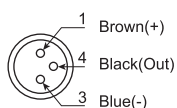
| Model | P8S-ERFXS P8S-ERSUS (M8) | P8S-ENFXS P8S-ENSUS (M8) | P8S-EPFXS P8S-EPSUS (M8) |
|--------------------------|-------------------------------|-----------------------------|-----------------------------|
| Switch type | Reed switch | NPN current sinking | PNP current sourcing |
| Contacts | Normal open | | |
| Voltage range | 5 to 120 V DC/AC | 5 to 30 VDC | |
| Current range | 100 mA max. | 50 mA max. | |
| Contact rating | 6 W max. | 1.5 W max. | |
| Shock resistance | 30 G | 50 G | |
| Voltage drop | 0.5 V max. | | 1.5V max. |
| Response time | Max. 1 ms | | |
| Temperature range | -10°C to 70°C (14°F to 158°F) | | |
| Lead wire | 2.8 Ø, 3C | | 3.0 Ø, 3C, PU |
| Lead wire length | 2 m | | |
| Indicator lamp | LED lights up when ON | | |
| Enclosure classification | IP67 (NEMA 6) | | IEC 529, IP67 |
| Indicator | Red LED | | Green LED |
| Connect diagram | | | |

Wiring of the QD

2 wire QD wiring



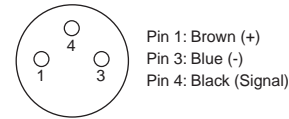
3 wire QD wiring



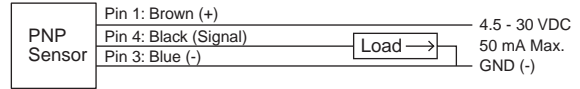
P8S-HHSP-011 and P8S-HISN-011 Sensors

P8S-HHSP-011 ↔ P8S-HISN-011

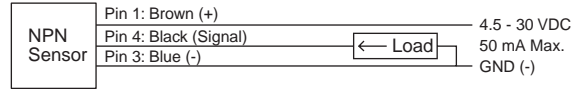
Description: Solid state magnetoresistive (MR) sensor
Function: PNP (N.O.) or NPN (N.O.)
Voltage supply range: 4.5 - 30 VDC
Current consumption: Max. 9 mA @ 24 V
Voltage drop: Max. 1.2 V
Max. switching current: 50 mA
Reverse polarity protection: Yes
Short circuit (transient) protection: Yes
Temperature range: -10°C to 70°C (14°F to 158°F)
Protection class: IP67
Response frequency: 1 kHz



P8S-HHSP-011



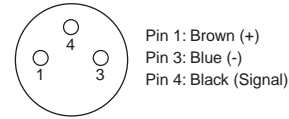
P8S-HISN-011



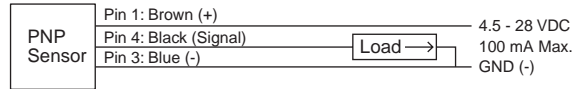
P8S-HHSP-017 and P8S-HHSN-017 Sensors

P8S-HHSP-017 ↔ P8S-HHSN-017

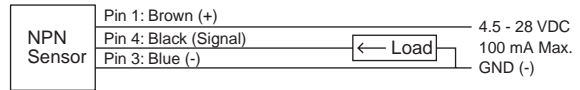
Description: Magnetoresistive 4mm Dovetail
Function: PNP (N.O.) or NPN (N.O.)
Voltage supply range: 4.5 - 28 VDC
Current consumption: Max. 10 mA @ 24 V
Voltage drop: Max. 0.5 V
Max. switching current: 100 mA
Reverse polarity protection: Yes
Short circuit (transient) protection: Yes
Temperature range: -10°C to 70°C (14°F to 158°F)
Protection class: IP67
Response frequency: 1 kHz
Hysteresis: <0.2 mm
Repeatability: <0.1 mm
Insulation resistance: Min 100 M OHM (Lead to case @ 500 VDC)
Withstand voltage: (Lead to case) 1000 VAC RMS for 1 min or 1500 VAC RMS for 2 sec



P8S-HHSP-017



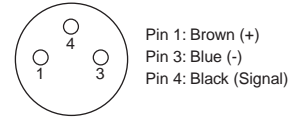
P8S-HHSN-017



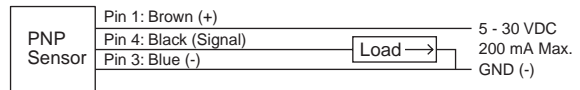
P8S-HISP-011 and P8S-HISN-011 Sensors

P8S-HISP-011 ↔ P8S-HISN-011

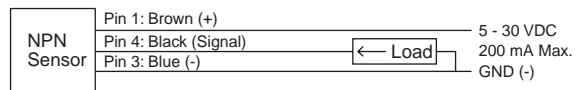
Description: Inductive 8mm proximity sensor
Connection: 3-pole quick disconnect
Function: PNP (N.O.) or NPN (N.O.)
Indicator: LED
Load current: 200 mA max.
Internal voltage drop: < 1 V
Current consumption: 15 mA max.
Operating voltage: 5 - 30 VDC
Reverse polarity protection: Yes
Response frequency: 800 - 1000 Hz
Relative humidity: 35 - 95%
Shielded design: Yes
Sensing range: 1.5 mm
Temperature range: -25°C to 7°C (-13°F to 45°F)
NEMA rating: 6
IEC rating: IP67
Ratings: CE, ISO 9001



P8S-HISP-011



P8S-HISN-011



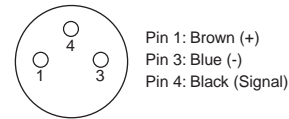
B
 Automation Products
 Actuator Products
 Grippers
 Slide Tables
 Rotary Tables
 Escapements
 Sensors
 Fittings



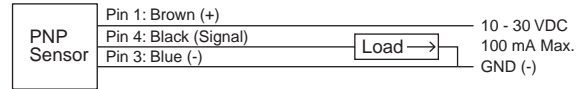
P8S-HISP-014 and P8S-HISN-014 Sensors

P8S-HISP-014 ↔ P8S-HISN-014

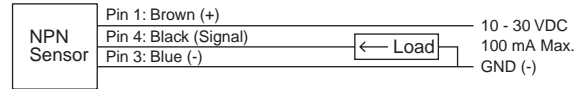
Description: Inductive 4mm proximity sensor
Connection: 3-pole quick disconnect
Function: PNP (N.O.) or NPN (N.O.)
Indicator: LED
Load current: 100 mA max.
Internal voltage drop: < 2.5 V
Current consumption: 18 mA
Operating voltage: 10 - 30 VDC
Reverse polarity protection: Yes
Response frequency: 5 kHz
Relative humidity: 35 - 95%
Shielded design: Yes
Sensing range: 1.0 mm
Temperature range: -25°C to 75°C (-13°F to 167°F)
NEMA rating: 6
IEC rating: IP67
Ratings: CE, ISO 9001



P8S-HISP-014



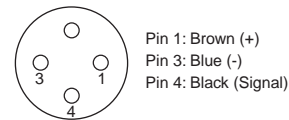
P8S-HISN-014



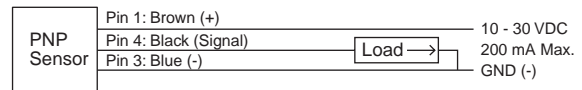
P8S-HISP-017 and P8S-HISN-017 Sensors

P8S-HISP-017 ↔ P8S-HISN-017

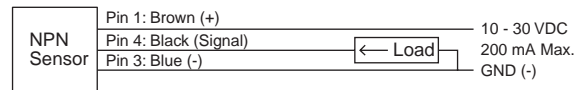
Description: Inductive 12mm proximity sensor
Connection: 4-pole quick disconnect
Function: PNP (N.O.) or NPN (N.O.)
Indicator: 360° LED
Load current: 200 mA max.
Internal voltage drop: < 2.0 V
Current consumption: 10 mA max.
Operating voltage: 10 - 30 VDC
Reverse polarity protection: Yes
Response frequency: 2 kHz
Shielded design: Yes
Sensing range: 4 mm
Temperature range: -25°C to 75°C (-13°F to 167°F)
NEMA rating: 6
IEC rating: IP67
Ratings: UL, CSA, CE



P8S-HISP-017



P8S-HISN-017



B

Automation Products
 Actuator Products

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Slide Tables


Rotary Tables


Escapements


Sensors

Fittings

Fittings

| Male Connector | Thread (BSPP) / Tube | 3mm | 4mm (5/32 in) | 6mm | 8mm (5/16 in) | 10mm | 12mm |
|---|----------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|
|  | M3 | 68LF-3M-M3 | | | | | |
| | M5 | 68LF-3M-M5 | 68LF-4M-M5 | 68LF-6M-M5 | | | |
| | 1/8 | | 68LF-4M-2G | 68LF-6M-2G | 68LF-8M-2G | | |
| | 1/4 | | 68LF-4M-4G | 68LF-6M-4G | 68LF-8M-4G | 68LF-10M-4G | 68LF-12M-4G |
| | 3/8 | | | 68LF-6M-6G | 68LF-8M-6G | 68LF-10M-6G | 68LF-12M-6G |
| | 1/2 | | | 68LF-6M-8G | 68LF-8M-8G | 68LF-10M-8G | 68LF-12M-8G |

| Male Elbow 90° Swivel | Thread (BSPP) / Tube | 3mm | 4mm (5/32 in) | 6mm | 8mm (5/16 in) | 10mm | 12mm |
|---|----------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|
|  | M3 | 369PLP-3M-M3 | 369PLP-4M-M3 | | | | |
| | M5 | 369PLP-3M-M5 | 369PLP-4M-M5 | 369PLP-6M-M5 | | | |
| | 1/8 | | 369PLP-4M-2G | 369PLP-6M-2G | 369PLP-8M-2G | | |
| | 1/4 | | 369PLP-4M-4G | 369PLP-6M-4G | 369PLP-8M-4G | 369PLP-10M-4G | 369PLP-12M-4G |
| | 3/8 | | | 369PLP-6M-6G | 369PLP-8M-6G | 369PLP-10M-6G | 369PLP-12M-6G |
| | 1/2 | | | 369PLP-6M-8G | 369PLP-8M-8G | 369PLP-10M-8G | 369PLP-12M-8G |

| Flow Control Right Angle | Thread (BSPP) / Tube | 3mm | 4mm (5/32 in) | 6mm | 8mm (5/16 in) | 10mm | 12mm |
|--|----------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|
|  | M3 | FCM731-3M-M3 | FCM731-4M-M3 | | | | |
| | M5 | FCM731-3M-M5 | FCM731-4M-M5 | FCM731-6M-M5 | | | |
| | 1/8 | | FCM731-4M-2G | FCM731-6M-2G | FCM731-8M-2G | | |
| | 1/4 | | | FCC731-6M-4G | FCC731-8M-4G | FCC731-10M-4G | |
| | 3/8 | | | | FCC731-8M-6G | FCC731-10M-6G | FCC731-12M-6G |
| | 1/2 | | | | | | FCC731-12M-8G |

B
Automation Products
Actuator Products
Grippers
Slide Tables
Rotary Tables
Escapements
Sensors
Fittings