

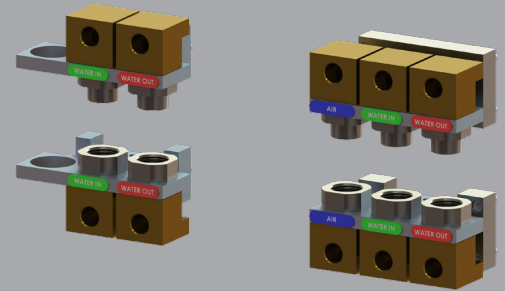
XCHANGE™ Utility Module

Medium Duty Fluid/Coolant Module

These Modules pass fluid during an automatic tool changing operation.

Advantages:

- Flexible Connection Options
- Valved/Checked interface on both Robot and Tool Adaptors
- Clear indication of supply/return lines
 - AIR, WATER IN, WATER OUT
- Extended Fittings to seal connection prior to flow of fluid



SPECIFICATIONS

| Model | Compatible XCHANGE™ Tool Changers | Number of User Connections | Label | Weight kg (lb) | User Interface* | Flow | | User Pressure Range bar (psi) |
|--------------------------|-----------------------------------|----------------------------|------------------------------|-------------------|-----------------|------|--|----------------------------------|
| | | | | | | Cv | | |
| Coolant Module – E80/100 | E80 and E100 | 2 | WATER IN and WATER OUT | 0.60 (1.32) | ¼" BSPP | 1.54 | | 0 – 7 (0 – 101) |
| Coolant Module – E125LP | E125LP | 2 | WATER IN and WATER OUT | 0.66 (1.46) | ¼" BSPP | 1.54 | | 0 – 7 (0 – 101) |
| Fluid Module – E80/100 | E80 and E100 | 3 | AIR, WATER IN, and WATER OUT | 0.84 (1.85) | ¼" BSPP | 1.54 | | 0 – 7 (0 – 101) |
| Fluid Module – E125LP | E125LP | 3 | AIR, WATER IN, and WATER OUT | 0.90 (1.98) | ¼" BSPP | 1.54 | | 0 – 7 (0 – 101) |

* Application specific fittings or threads available upon request.

Operating Temperature: **5 - 60 °C (40 - 140 °F)**
 Noise Emissions (Sound Pressure): **≤ 70 dB(A) in any direction**

FLOW FORMULAS

Imperial measurement units:

Flow of Gases (Pneumatic Module)

$$Q_G = 962 * C_V * \sqrt{\frac{P_1^2 - P_2^2}{G_G * T}}$$

Q_G = Gas flow rate in Standard Cubic Feet per Hour (SCFH)
 Q = Valve flow rate in gallons per minute (US gpm)
 C_V = Flow Coefficient = 1.54 for these modules
 P_1 = Upstream (inlet) absolute pressure in pounds per square inch (psi)
 P_2 = Downstream (outlet) absolute pressure in pounds per square inch (psi)
 G_G = Specific gravity of medium where air at 70 °F and 14.7 psia equals 1.0
 G_F = Specific gravity of fluid related to water
 T = Absolute temperature in °R (°F + 460)

Flow of Fluids (Coolant Module)

$$Q = C_V * \sqrt{\frac{P_1 - P_2}{G_F}}$$

Metric measurement units:

Flow of Gases (Pneumatic Module)

$$Q_G = 395 * C_V * \sqrt{\frac{P_1^2 - P_2^2}{G_G * T}}$$

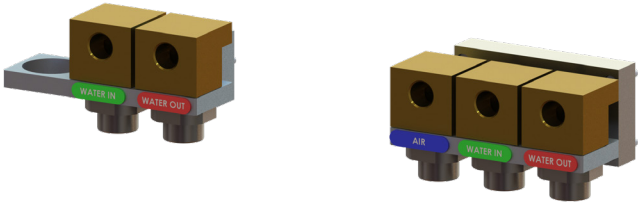
Q_G = Gas flow rate in Standard Cubic Meters per Hour (m³/h)
 Q = Valve flow rate in Cubic Meters per Hour (m³/h)
 C_V = Flow Coefficient = 1.54 for these modules
 P_1 = Upstream (inlet) absolute pressure in bar
 P_2 = Downstream (outlet) absolute pressure in bar
 G_G = Specific gravity of medium where air at 20 °C and 1 bar equals 1.0
 G_F = Specific gravity of fluid related to water
 T = Absolute temperature in °R (°F + 460)

Flow of Fluids (Coolant Module)

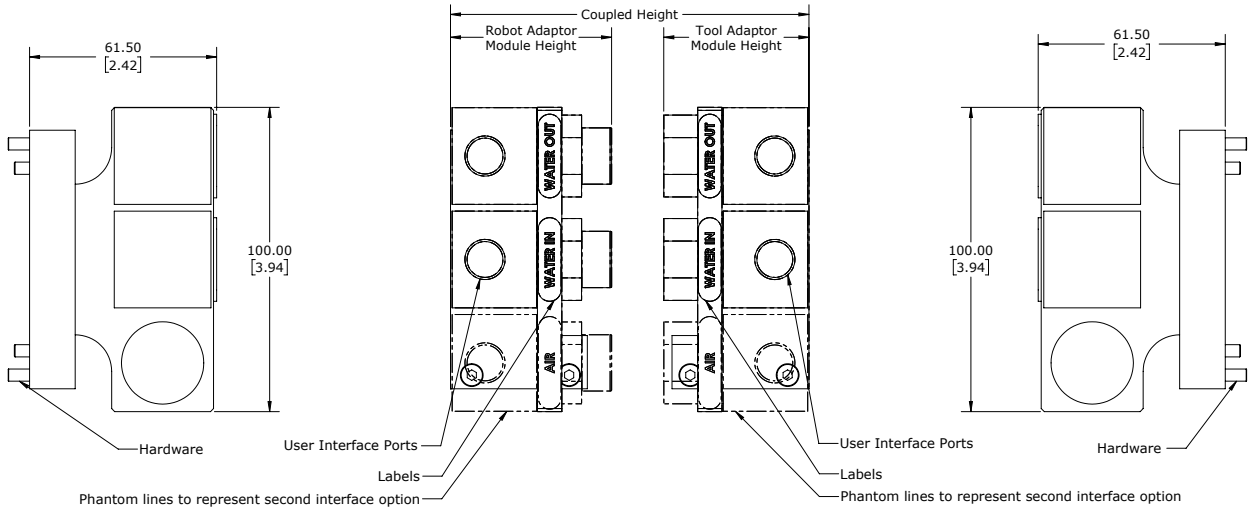
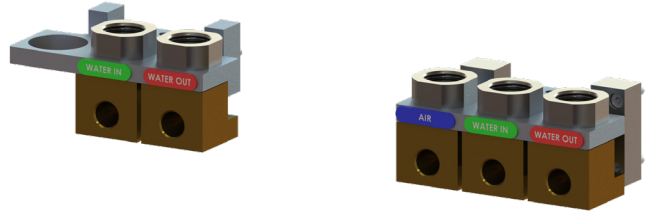
$$Q = 0.865 * C_V * \sqrt{\frac{P_1 - P_2}{G_F}}$$

PRODUCT INFORMATION

ROBOT ADAPTOR MODULE



TOOL ADAPTOR MODULE



NOTE: Dimensions are mm [in]

| Model | Label | Coupled Height | Robot Adaptor Module Height | Tool Adaptor Module Height |
|-----------------------|--|-----------------|-----------------------------|----------------------------|
| E80/100 Module | 2x M4 x 10mm Dowels and 2x M6 x 12mm SHCS | 90.04 (3.54) | 52.42 *** (2.06) | 47.29 (1.86) |
| E125LP Module | 2x M4 x 10mm Dowels and 4x M6 x 12mm SHCS | 91.00 (3.58) | 52.96 (2.09) | 47.71 (1.88) |

* Dimensions are in millimeters (inches).

** All dimensions are descriptive and subject to variation for technical upgrading. We reserve the right to make variations without prior notification.

*** E80/100 Modules go beyond the (non-coupled) face of their respective sides.



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