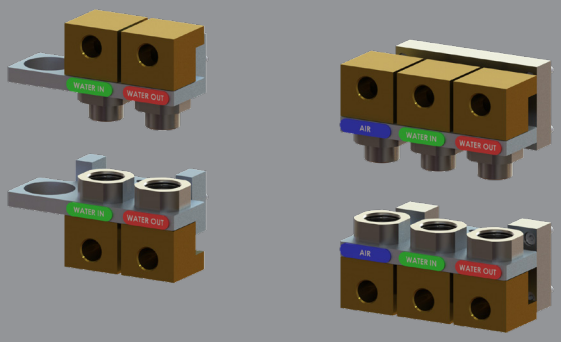
XCHANGE® Utility Module
Medium Duty Fluid/Coolant Module

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
  - o 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 Cv	User Pressure Range bar (psi)
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)

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

Flow of Fluids (Coolant Module)

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

Q_G = Gas flow rate in Standard Cubic Feet per Hour (SCFH)
Q = Valve flow rate in gallons per minute (US gpm)
Cv = 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)

Metric measurement units:

Flow of Gases (Pneumatic Module)

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

Flow of Fluids (Coolant Module)

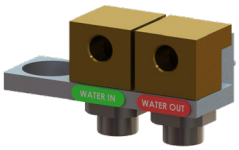
$$Q = 0.865 * Cv * \sqrt{\frac{P_1 - P_2}{G_F}}$$

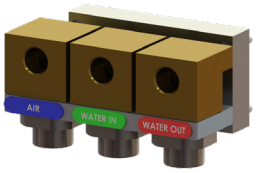
Q_G = Gas flow rate in Standard Cubic Meters per Hour (m^3/h)
Q = Valve flow rate in Cubic Meters per Hour (m^3/h)
Cv = Flow Coefficient = 1.54 for these modules
P_1 = Upstream (inlet) absolute pressure in bar
P_2 = Downstream (outlet) absolute pressure in bar
G_G = Specific gravity of medium where air 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)

EFFECTO®

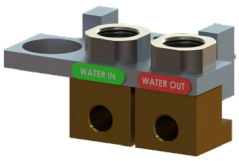
PRODUCT INFORMATION

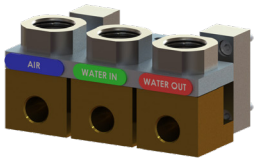
ROBOT ADAPTOR MODULE

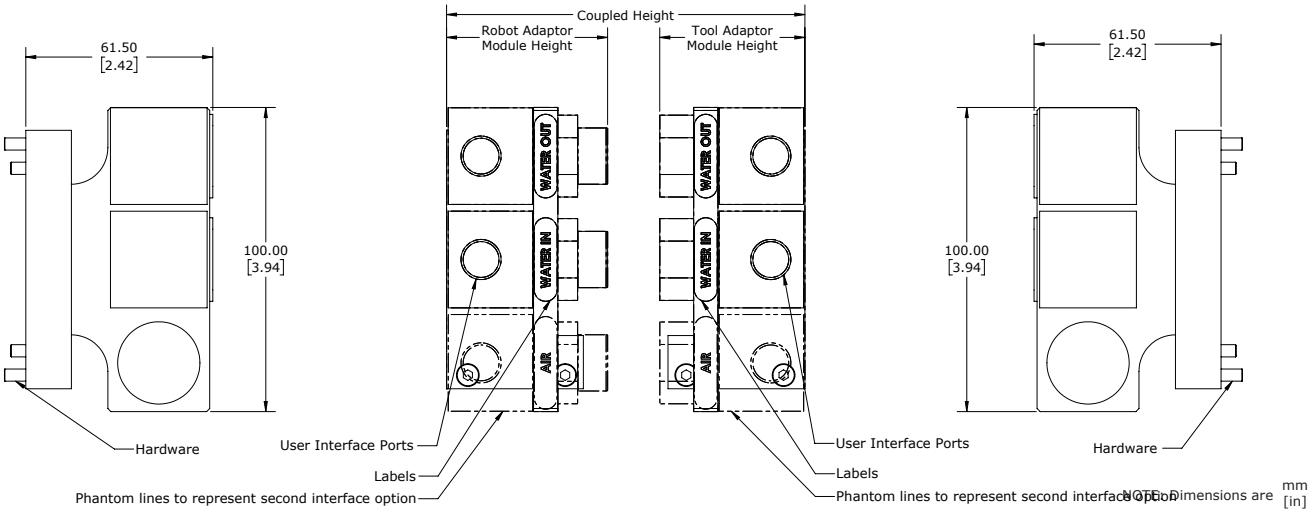




TOOL ADAPTOR MODULE







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.

Effecto Group S.p.A.
Via Roma, 141/143
28017 San Maurizio d'Opaglio (NO) - IT
Tel. +39 0322 96142
info@effecto.com

Effecto, Inc.
648 Saratoga Road
Glenville, NY 12302 - US
Tel. +1 518 384 1000
info@us.effecto.com

Effecto GmbH
Liegnitzer Str. 6
82194 Gröbenzell - DE
Tel. +49 8142 59397 0
info@de.effecto.com

www.effecto.com