

# Application Note

## Guide to easy selection of EMEC Metering Pumps

To select the most suitable pump for your application, answer 5 questions relating to flow, pressure, inputs, chemical & temperature.

- 1. FLOW:** What flow rate do you require the pump to dose at?
- 2. PRESSURE:** What is the maximum pressure you will dose into?
- 3. INPUTS:** Is it necessary to control the pump externally via a pulsing contact or a 4-20mA signal?
- 4. CHEMICAL:** Are all the liquid end materials of the pump compatible with your chemical?
- 5. TEMPERATURE:** What temperature are you going to dose into?



### FLOW & PRESSURE

All EMEC pumps are rated at a maximum flow rate at a maximum pressure (based on water at ambient temperature). For example, a KCO 10 05 pump's maximum rating is 5l/hr @ 10 bar injection pressure. Hence, you will achieve a higher flow rate if injecting into a lower pressure. **It is always better to select a pump that will achieve the desired dose rate at less than its maximum rating.** The instruction manuals for each pump (downloadable at [www.cwc.com.au](http://www.cwc.com.au)) include Flow rate vs Pressure curves.

### INPUTS

All pumps have internal timers which regulate the speed, or frequency at which the pump's solenoid strokes. The speed is adjusted or programmed on the pump to achieve a constant dose rate. However, if variable dose rate is required, for example, to dose proportional to water make-up, or to dose proportional to pH or ORP levels in the water, then external input capability is necessary. External inputs can either be in the form of a contact closure (such as from a controller or water flow meter) or a 4-20mA current. If external control is required, or even internal control with extreme turndown facility, it is necessary to select a pump with external control capability.

The following table suggests which EMEC pump to select depending on input required:

Interface	Input	Wall Mount		Foot Mount	
		Non-oxidising	Hypo Dosing	Non-oxidising	Hypo Dosing
Analogue	On / Off	FCO / VCO	FACO / VACO	KCO	-
Analogue	Pulse (or On / Off)	FPVM	FAPVM	KPVM / CMSPVM	KAPVM / CMSAPVM
Digital	Pulse or 4-20mA	VMF	VAMF	KMF / CMSMF	KAMF / CMSAMF

**Note: All Foot Mount pumps can be ordered with wall mount brackets to suit.**

V2.0

## CHEMICAL

<b>Head:</b>	PP (Polyprop), PVDF or PMMA (Acrylic) *
<b>Diaphragm:</b>	PTFE (Teflon)
<b>Suction Tube:</b>	PVC
<b>Discharge Tube:</b>	PE (Polyethelene)
<b>Valve bodies:</b>	PP (Polypropylene) or PVDF
<b>Injection valve spring:</b>	Hastelloy C276
<b>Balls:</b>	Ceramic
<b>Seals (O-rings):</b>	FPM (Viton) or EPDM

\* PMMA Acrylic standard on self-venting (de-gassing) heads on C & K series pumps for dosing Sodium Hypochlorite and on LPV high viscosity heads

This standard configuration of materials is suitable for most chemical dosing applications.

### Important Notes:

1. Request EPDM (Dutral) Seals (O-rings) if dosing Caustic (typically for boiler dosing applications).
2. Request FPM (Viton) Seals (O-rings) if dosing Acid
3. PVDF heads are standard on the majority of our dosing pumps, rated for Sulphuric Acid > 98.5%
4. Always check chemical compatibility charts (downloadable at [www.cwc.com.au](http://www.cwc.com.au))

- Part numbers of pumps with EPDM seals have "EP" on the end of the code
- Part numbers of pumps with FPM seals have "FP" on the end of the code

## TEMPERATURE

- EMEC pumps' flow & pressure ratings are based on water at ambient temperature
- Maximum pressure ratings reduce at higher temperatures. Refer to the graph below of pressure vs temperature of standard PP (Polypropylene), and PVDF injection valves supplied with all pumps.
- If dosing into temperature > 90°C (or high pressure/temperature application) always request PVDF injection valves (refer to graph below)

