

# Superheat Controller EXD-HP1/2 And Electronic Expansion Valve EXM/L

The First Stand-Alone Proven And Reliable  
Solution For Wet / Vapor Injection



# Universal Superheat / Economizer Controller

EXD-HP1/2 are state-of-the-art drivers for superheat and economizer control and can be applied to standard systems such as heating, heat pumps, air conditioning, chillers, rooftops, package units and close control. EXM / EXL are unipolar stepper motor driven electronic expansion valves primarily designed for accurate refrigerant mass flow control within wide operating ranges of capacity and differential pressure. EXD-HP1 drives one EXM/EXL electronic expansion valve, whereas EXD-HP2 drives two independent EXM/EXL valves. The economizer control is a combination of two linked control loops i.e. superheat control or discharge hot gas temperature control. The injection method can be with vapor only or with wet/vapor refrigerant.



EXD-HP2



EXM-EXL

## EXD-HP1/2 Controllers Features

- Plug and operate: Self adapting routine algorithms eliminate the need for PID adjustment of different operating modes or systems.
- Stand-alone automated control
- ModBus (RTU) communication capability (as slave)
- Limitation of evaporating pressure (MOP)
- Low pressure switch function/alarm
- Discharge hot gas temperature limit alarm
- Monitoring of sensors, sensor wiring and detection of sensor and wiring failures
- Integrated LED display and keyboard
- Key for down and up loading of settings for serial production

## EXM/L Valves Feature

- Valve and driver are harmonized for best-in-class performance
- Capable of 40 bar MOPD in normal flow direction
- Maximum allowable pressure of 45 bar
- Reliable: Life expectancy of 225 million pulses
- Bi-flow capability with equal capacity in both flow directions
- High resolution

## EXM/EXL Data

Type	PCN	Nominal capacity, kW			
		R410A	R407C	R22	R134a
EXM-BOB	800 400M	5.5	5.0	4.8	3.7
EXM-BOD	800 401M	11.6	10.5	9.9	7.7
EXM-BOE	800 402M	13.7	12.4	11.8	9.1
EXL-B1F	800 405M	17.0	15.4	14.6	11.3
EXL-B1G	800 406M	23.0	20.7	19.7	15.2



PT5-xxM



PT6-xxM

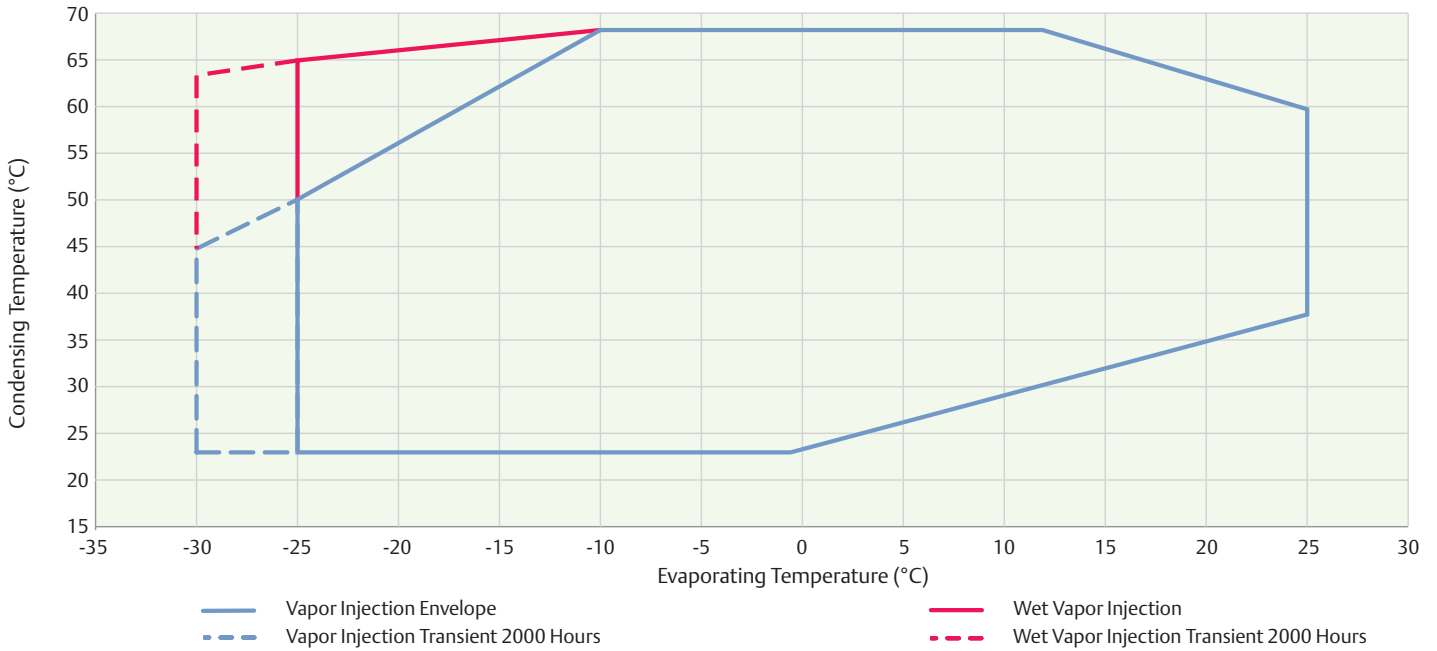


PT5-xxT



PT4-Mxx

## Application Envelope



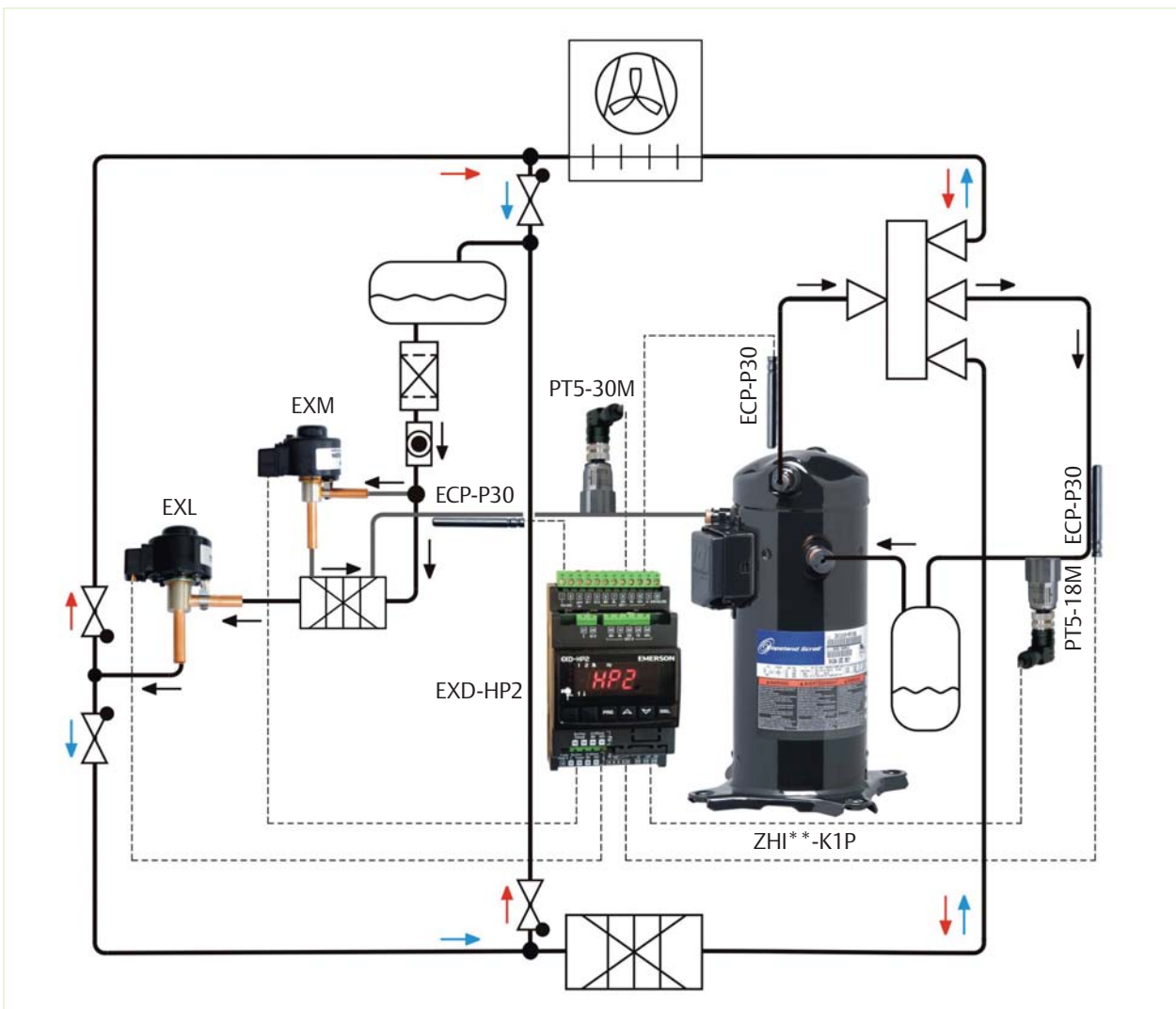
## Solutions For Variety Of Systems

System	Economizer heat exchangers to be managed	Indoor / outdoor heat exchanger to be managed	Managed by
Heating or cooling only	-	1	EXD-HP1
Heating	1	-	EXD-HP1
Heating split system (outdoor)	-	1	EXD-HP1
Heat pump	1	2	EXD-HP2
Heating split system	1	1	EXD-HP2
Heating package system	1	2 (connected to valve)	EXD-HP2

## Typical Ordering Package

Description	Type	PCN M = Multipack (20 pieces)
Controller with one EXV output	EXD-HP1	807 836M
Controller with two EXV outputs	EXD-HP2	807 837M
Temperature sensor with 3 meter cable	ECP-P30	804 495
Pressure sensors (suction pressure) - 0.8...7 bar (R22, R134a, R407C) - 0.....18 bar (R410A, R32)	PT5-07M / PT5-07T PT5-18M / PT5-18T PT6-18M	802 350M / 802 370M 802 351M / 802 371M 802 361M
Recommended for intermediate pressure (economizer control)	PT5-30M / PT5-30T	802 352M / 802 372M
Plug and cable assembly for pressure sensor - 1.5m cable length - 3.0m cable length	PT4-M15 PT4-M30	804 803M 804 804M

## Application Example: Reversible Heat Pump For R410A With Economizer



For more details, see [www.emersonclimate.eu](http://www.emersonclimate.eu)

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