

Dixell™

ELECTRONIC EXPANSION VALVE



○ **EX3**



EX3



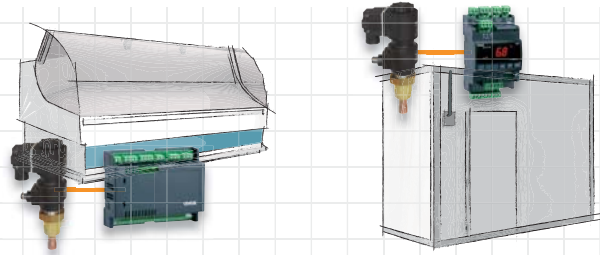
COMPLIANT WITH
XM678D
& XEV22D



ELECTRONIC EXPANSION VALVE

The **EX3** is a stepper motor and solenoid safety valve designed to control the gas flow and HCFC with embedded in only one body the safe positive shut-off valve. Combined with XM678D (multiplexed case controller) or XEV22D (stepper EEV driver), it is the ideal solution for applications such as retail showcases and cold rooms with multiple parallel evaporators; it maximizes energy savings and guarantees quality food storage. The valve is able to shut-off the refrigerant line automatically in case of power interruption, without the need of an external battery, any additional solenoid valve or electronic component.

Complete integrated and intelligent solution to maximize the system energy savings and optimize superheat control.



HIGH EFFICIENCY

Thanks to the linear action from 10 to 100% with 500 steps, and the XM678D auto-adaptive superheat control algorithm, the EX3 maximizes energy saving and optimizes temperature management.



SAFETY

The EX3 safeguards the application in case of power interruption with the safe positive shut-off valve.



EASY MAINTENANCE & INSTALLATION

The unique valve body design provides easy on-site commissioning, maintenance and service.



FLEXIBILITY

The user can easily select a suitable valve for the application's working conditions and modify its capacity with the help of different exchangeable components that maximize valve flexibility.



LESS NOISE & VIBRATION

No noise during normal operations and less vibration in comparison with PWM valve.



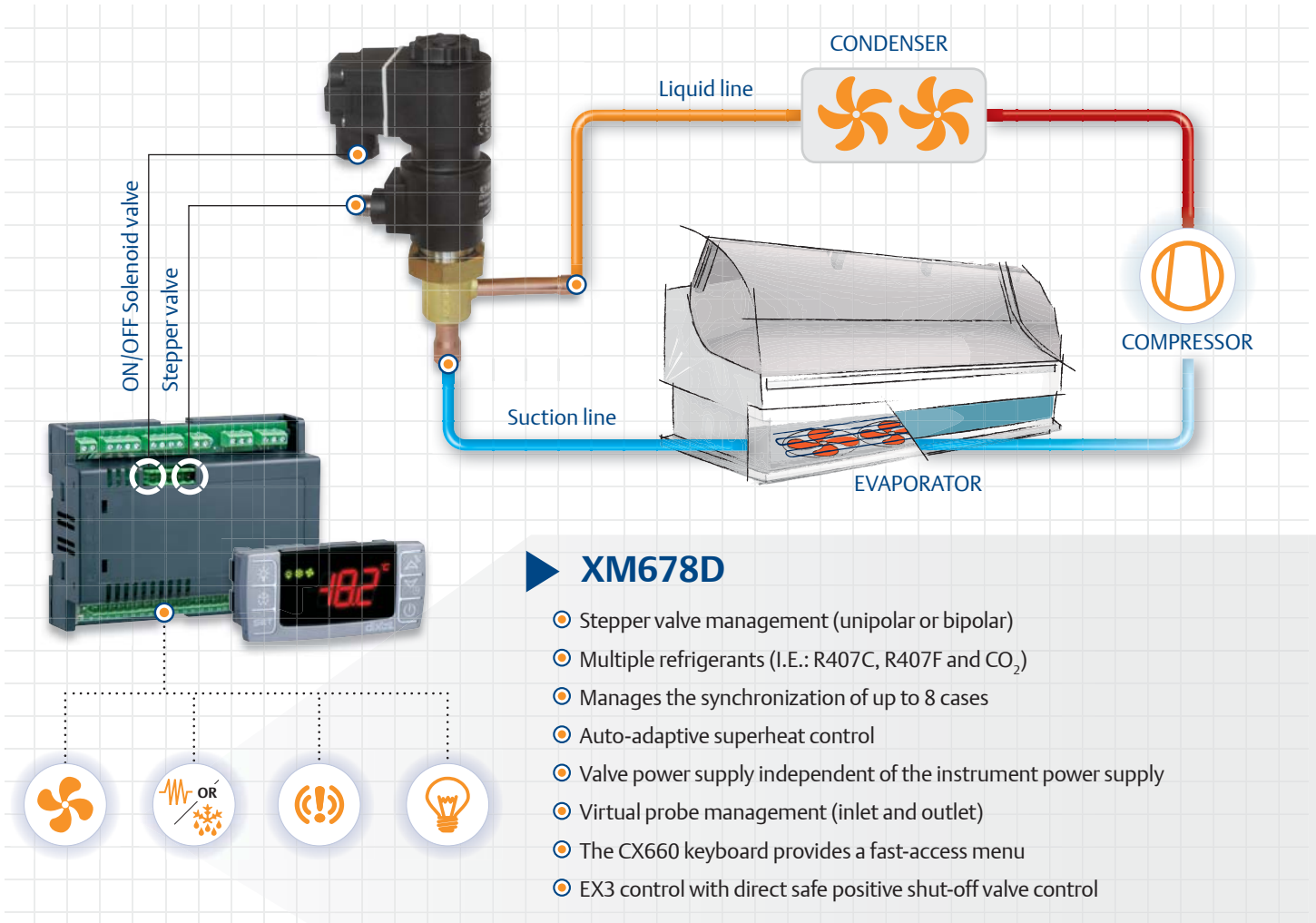
HIGH RELIABILITY

The cleanable strainer prevents internal leakage from damaging the valve; less brazing joints material and labor result in lower external leakage.



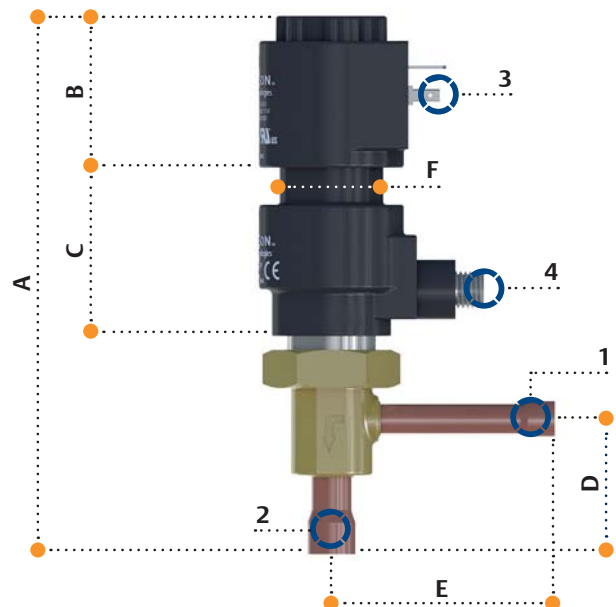
ADVANCED TECHNOLOGY ENSURES HIGH RELIABILITY

- High efficiency because of its best-in-class control resolution
- High flexibility because of its take-apart structure for field serviceability
- Lower superheat setting and more efficient use of heat exchangers
- Power supply fail management ensured by a safe positive shut-off valve with three voltage options (24Vac, 110Vac, 230Vac)
- Plant safety, saving installing time and costs



DIMENSIONS

A	170mm (6.7")
B	48mm (1.9")
C	53mm (2.1")
D	43mm (1.7")
E	71mm (2.8")
F	35mm (1.4")
1	Inlet (Braze) 3/8" ODF
2	Outlet (Braze) 1/2" ODF
3	Solenoid coil connector DIN 43650A
4	Stator connector M12 Plug (5 Pins)



VALVE CAPACITIES

Code	Pin type	Paired orifice (mm)	Capacity (R404A, kW)	Capacity (R134a, kW)	Capacity (R22, kW)	Capacity (R407F, kW)	Capacity (R507, kW)	Capacity (R410A, kW)
EX3-200	Pin 2	1.5	1.1	1.24	1.59	1.77	1.08	1.92
EX3-300	Pin 3		2.3	2.59	3.33	3.70	2.26	4.01
EX3-400	Pin 4		3.7	4.17	5.36	5.95	3.64	6.46
EX3-500	Pin 5		6.0	6.77	8.69	9.65	5.90	10.47
EX3-600	Pin 6	2.6	9.7	10.94	14.05	15.61	9.54	16.93
EX3-700	Pin 7		12.3	13.87	17.81	19.79	12.10	21.46
EX3-800	Pin 8		13.7	15.45	19.84	22.04	13.48	23.91
EX3-900	Pin 9		17.5	19.74	25.34	28.16	17.22	30.54

NOTE: The capacities at different ratings are equal.

TECHNICAL FEATURES

GENERAL	Refrigerant temperature range	Evaporating temperature -50°C ÷ +20°C; Liquid temperature -30°C ÷ +75°C
	Maximum operating pressure difference (MOPD)	24.5bar
	Maximum working pressure (MWP)	34.4bar
	Operating principle	Uni-polar with 8 pulses (steps) sequencing
	Vibration	≤4g
	Weight	770g (with solenoid coil and stepper motor)
SOLENOID	Insulation Class	F
	Operating voltage / Frequency / Consumption	24Vac (+10%, -15%); 50/60Hz; 6.5W (12.7VA) 110-120Vac (+10%, -15%); 50/60Hz; 7.4W (14.4VA) 220-230Vac (+10%, -15%); 50/60Hz; 8.0W (16.1VA)
	Power	11Watts
	Connector type	3 Wires, DIN43650A (optional IP67 Connector)
STEPPER	Operating voltage	12Vdc±10%
	Operating current	300mA per phase
	Stepper motor stator resistance	40Ω±10%
	Steps	Starts to open at 80±40 pulses; fully open at 650 pulses
	Frequency range	30÷90Hz
	Connector type	5 wires M12 plug
Valve opening relation	Linear to step position from 10% to 100% of the nominal capacity	



ACCESSORIES

Code	Description
EX3S - STR	Strainer assy - 1 piece
EX3S - C024	Coil 24 Vac - o-rings - Screw cap
EX3S - C120	Coil 120 Vac - o-rings - Screw cap
EX3S - C230	Coil 230 Vac - o-rings - Screw cap
EX3S - S012	Step motor 12 V - o-ring
EX3S - NUTO	Nut o-ring
EX3S - SAK	Seal assembly kit
EX3S - PG5	Connect box assy without cable IP65
EX3S - CAB1	Connect box assy with 1,5m cable IP65
EX3S - CAB2	Connect box assy with 3m cable IP65
EX3S - PL67	Connector IP67
EX3S - CAB5	Connect box assy with 1,5m cable IP67
EX3S - CAB6	Connect box assy with 3m cable IP67
EX3S - M150	Connect box M12 step valve assy with 1,5m cable
EX3S - M300	Connect box M12 step valve assy with 3m cable
EX3S - M600	Connect box M12 step valve assy with 6m cable
EX3 - 200	Pin #2, Small orifice

Code	Description
EX3 - 300	Pin #3, Small orifice
EX3 - 400	Pin #4, Small orifice
EX3 - 500	Pin #5, Small orifice
EX3 - 600	Pin #6, Large orifice
EX3 - 700	Pin #7, Large orifice
EX3 - 800	Pin #8, Large orifice
EX3 - 900	Pin #9, Large orifice
EX3S - PIN2	Pin #2 - Snap rings and o-ring
EX3S - PIN3	Pin #3 - Snap rings and o-ring
EX3S - PIN4	Pin #4 - Snap rings and o-ring
EX3S - PIN5	Pin #5 - Snap rings and o-ring
EX3S - PIN6	Pin #6 - Snap rings and o-ring
EX3S - PIN7	Pin #7 - Snap rings and o-ring
EX3S - PIN8	Pin #8 - Snap rings and o-ring
EX3S - PIN9	Pin #9 - Snap rings and o-ring
EX3S - ORE1	Orifice kit 1
EX3S - ORE2	Orifice kit 2

OUTSTANDING PERFORMANCE

▶ MAXIMUM WATER PROTECTION

The IP67 ensures the highest protection even under the most severe working conditions. This feature is valuable in case of high pressure water during showcase cleaning, defrost dripping water and when the valve is covered by ice. Depending on the connector type, the valve IP can be IP65 or IP67 (for solenoid valve).



▶ HIGH ENERGY SAVING

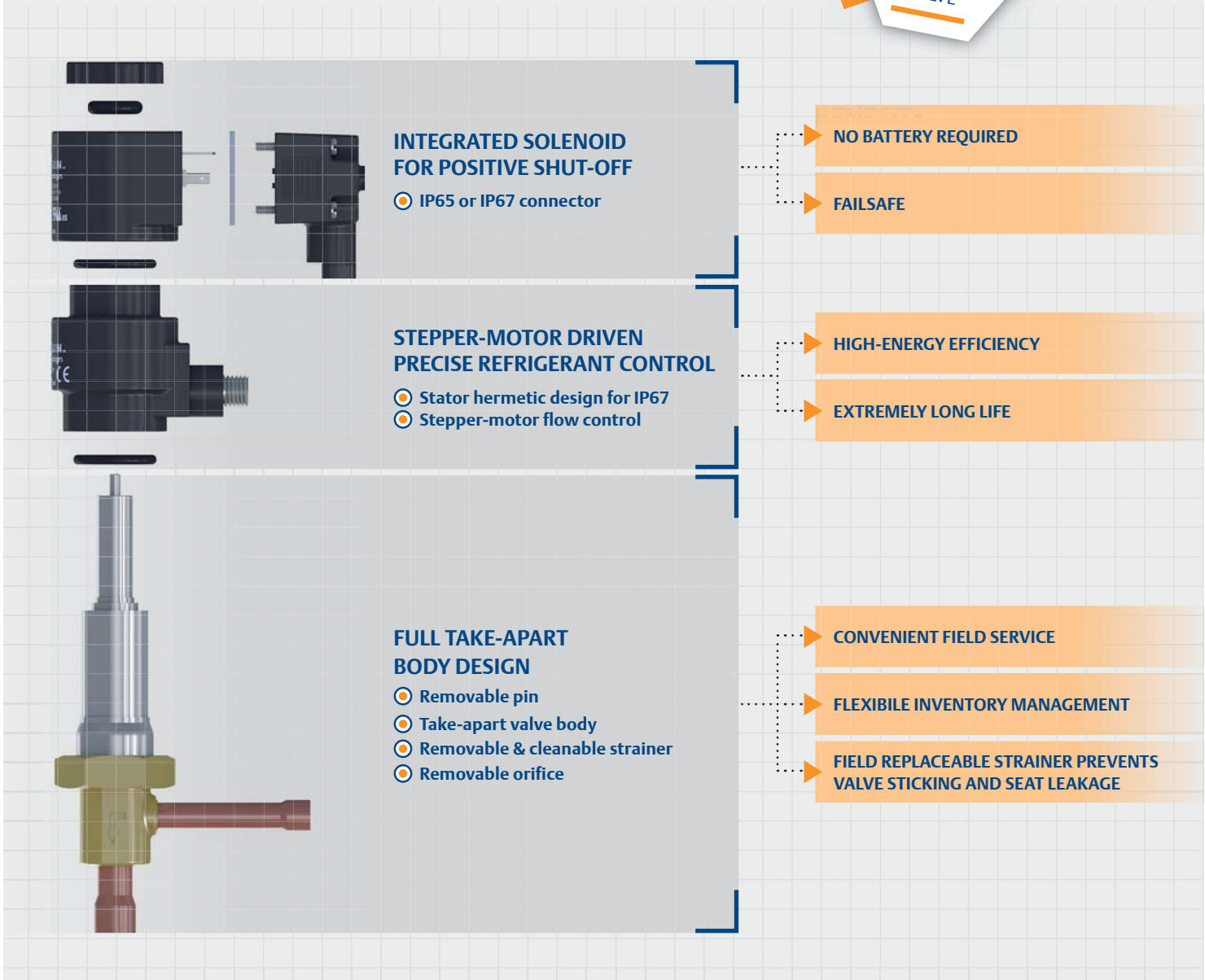
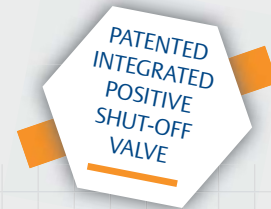
STABLE CONTROLS MINIMIZE ENERGY CONSUMPTION!

The EX3 valve is driven by a stepper motor that offers 500 steps of control resolution. This feature, coupled with field exchangeable orifices, reduces mass flow, resulting in optimal energy efficiency also in comparison to thermal expansion or PWM valve performances. EX3 responds more rapidly to heat/thermo load changes, is more adaptable to ambient condition changes during the year, and enables a lower superheat setting with more efficient use of heat exchangers/evaporators.



ADVANCED ENGINEERING SOLUTION

The disconnectable body valve guarantees an easy strainer cleaning and substitution.





EmersonClimate.com/Dixell



Dixell S.r.l. - 32010 Pieve d'Alpago (BL) ITALY - Z.I. Via dell'Industria, 27
Tel. +39.0437.9833 r.a. - Fax +39.0437.989313 - EmersonClimate.com/Dixell - dixell@emerson.com

release 1.0 - 1582006150-GB

All trademarks are property of their respective owners.

Dixell reserves the right to alter its products without notice. All rights reserved.

Because environmental conditions are outside of Dixell's control, we cannot assume liability for results obtained nor any damages that may occur due to improper application.

Manuals and updates are available on our Web Site EmersonClimate.com/Dixell

EMERSON. CONSIDER IT SOLVED.™