



TRANE[®]



CMAB High Seasonal Efficiency

BALANCE[™]



You can be sure **Trane Balance™ multi-pipe units** with innovative variable speed scroll compressors will deliver what you need: **simultaneous cooling and heating**, precise temperature control, safe and sustainable system with low operating costs. Trane multi-pipe units deliver real value for you – and real comfort for your customer.



Innovative and versatile solution

- Simultaneous cooling and heating with one compact unit
- Variable speed compressors ensuring superior energy efficiency at part load conditions
- Suits new construction and building renovation – from office buildings and hospitals to places of entertainment and hotels



High efficiency and lowest cost of ownership

- Optimal use of renewable and recovered energy
- Full energy recovery for the best return on every kilowatt-hour of electricity
- Exceeds energy efficiency benchmarks based on Total Efficiency Ratio
- Quality and reliability to count on. Professional support by 24/7 Trane Service
- Low in-rush currents to save fixed costs charged by utilities



Optimized comfort, simple and safe

- Precise temperature control - variable speed compressors can heat or cool rapidly on demand by increasing speed instantly
- Greater comfort in all seasons and part-load conditions
- Safe – a water-based system with no refrigerant inside the building
- Very silent fans and variable speed compressors running at low(er) speed when building demand reduces



Sustainability

The continuous drive to improve energy efficiency of building systems requires an optimal balancing in the demand and supply of both heating and cooling. Trane’s multi-pipe units can simultaneously deliver heating and cooling. A sustainable solution for many applications.

Unit description

- Variable Speed Driven scroll compressors
- Intelligent controller with “state-of-the-art” software developed specifically for multi-pipe units
- Two refrigerant circuits and electronic expansion valves
- V-shape coils for improved air flow and easy access
- Self-adaptive defrosting system able to intervene only in case of consistent thickness formation of ice on the coil fins, reducing number of defrost cycles by 50%
- Stainless steel (AISI 316) brazed plate evaporator and recovery heat exchanger, externally insulated and including pressure differential switch. Evaporator includes antifreeze protection electric heater
- Condensing and evaporating pressure control with variable fan speed modulation for outdoor air temperature up to -12°C
- Low in-rush current
- Serial card RS485 for Modbus

Factory-mounted options

- Super low noise version
- Serial card with BACnet™ Protocol MS/TP or TCP/IP
- Gateway Modbus LonTalk™
- Soft starter (only for On/Off compressors)
- Automatic circuit breakers
- Power factor correction to cos phi 0.91
- Control panel electric heater with thermostat
- EC fans for external static pressure up to 100 Pa
- Protection grilles



Trane: designed to be the best - tested to prove it

Proof of performance

This symbol means that Trane Multi-pipe Units have undergone extensive testing in Trane’s state-of-the-art HVAC test facility in France to guarantee that testing of your Multi-pipe unit conforms to EN 14511-2013 and EN 14825-2016 standards.



Experience performance validation of your unit – before shipment

Schedule an optional witness test in our testing facility in France before the unit ships to the jobsite. Trane’s test facility is capable of evaluating the performance of your Multi-pipe unit - based on customer-defined parameters. Contact your local sales office for more information.

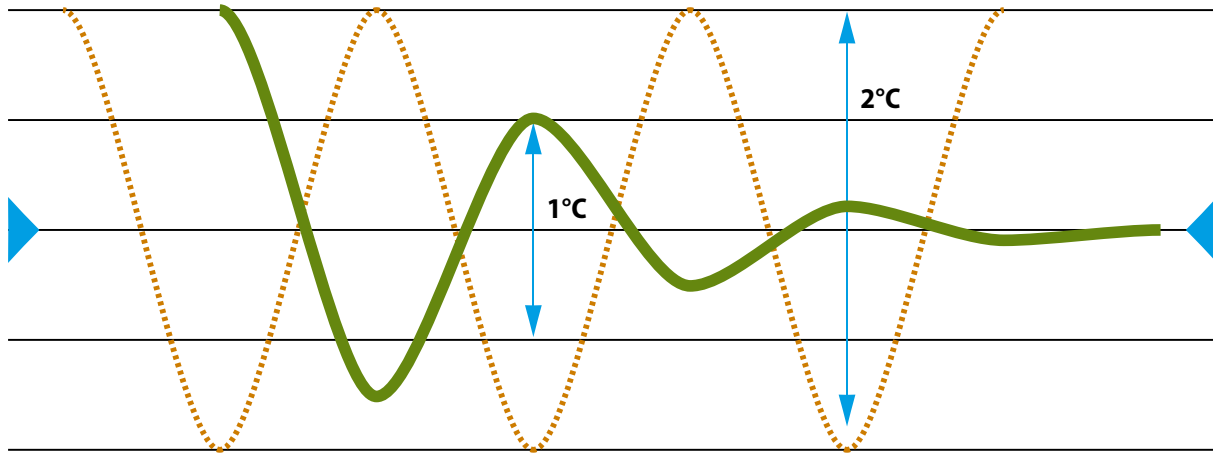


Trane European Large HVAC Test Facility

A 5000m³ climate chamber with advanced ambient air temperature and humidity control. Regardless of outdoor air conditions, a wide range of operating conditions can be simulated within this range:

- Air temperature: -25°C/+55°C
- Leaving water temperature: -12°C/+65°C (Below 4°C with glycol)
- Humidity: 10 – 90% max @ 7°C dry bulb.

Precise temperature control



Temperature setpoint Variable Speed Drive ON-OFF





CMAB HSE Standard Noise*

Unit size		75	100	120	135	150	165	185	225	255
Cooling (1)										
Cooling capacity	kW	66.8	93.0	107.9	125.8	135.9	151.6	166.6	199.0	231.9
Compressors power input	kW	22.2	28.2	35.3	38.2	41.0	49.2	56.3	67.4	77.8
ESEER	kW/kW	3.71	3.74	3.84	3.95	4.09	3.60	3.64	3.91	4.06
Heating (2)										
Heating capacity	kW	74.2	101.2	118.9	136.6	147.7	165.5	183.5	221.0	256.0
Compressors power input	kW	21.1	27.4	33.5	37.2	39.6	45.9	51.6	62.6	72.5
P rated, heating	kW	61.6	84.1	98.5	113.3	122.3	136.7	152.2	182.8	211.8
ηs in %	%	131	130	131	135	133	126	129	133	137
SCOP	kW/KW	3.34	3.32	3.36	3.44	3.40	3.23	3.29	3.41	3.49
Cooling + Heating (3)										
Cooling capacity	kW	66.9	91.8	108.1	123.7	135.0	153.8	170.4	203.0	236.0
Heating capacity	kW	88.8	120.3	143.0	162.4	176.1	201.6	224.2	263.8	306.2
Compressors power input	kW	21.9	28.4	34.8	38.7	41.1	47.8	53.9	64.8	74.8
Dual mode efficiency coefficient	kW/kW	7.1	7.5	7.2	7.4	7.6	7.4	7.3	7.2	7.2
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2
Number of scroll compressors		2	2	4	4	2	4	4	4	4
Type of compressor(s) per circuit		1 VSD scroll		1 VSD scroll + 1 fixed speed scroll		1 VSD scroll	1 VSD scroll + 1 fixed speed scroll			
Sound pressure level at 10 m	dB(A)	54	56	54	55	62	58	58	61	63
Length	mm	2560	3559	3559	2617	2617	3565	3565	3565	3565
Width	mm	1100	1100	1100	2201	2201	2260	2260	2260	2260
Height	mm	2111	2159	2159	2175	2175	2400	2400	2400	2400
Shipping weight	kg	1116	1331	1445	1643	1644	2092	2113	2366	2714

(1) According EN 14511-2013. Outdoor air temperature 35°C and evaporator water temperature 12/7°C

(2) According EN 14511-2013. Outdoor air temperature 7°C-90% R.H. and condenser water temperature 40/45°C

(3) Gross values. Condenser water temperature in/out 40/45°C and evaporator water temperature 12/7°C

* CMAB HSE units are also available in Super Low Noise. For a detailed selection please contact your Trane sales office.

Discover Trane's full range of innovative multi-pipe units

With scroll compressors

- CMAB Standard Efficiency (SE)
- CMAB High Efficiency (HE)
- CMAB High Seasonal Efficiency (HSE), Adaptive Frequency Drive, inverter technology
- CMAB Extra Efficiency (XE)

With screw compressors

- RTMA Standard Efficiency (SE)
- RTMA High Seasonal Efficiency (HSE) Adaptive Frequency Drive, inverter technology



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For more information visit trane.com

