



Constructability | Maintainability | Sustainability



Next-generation Process Cooling solutions

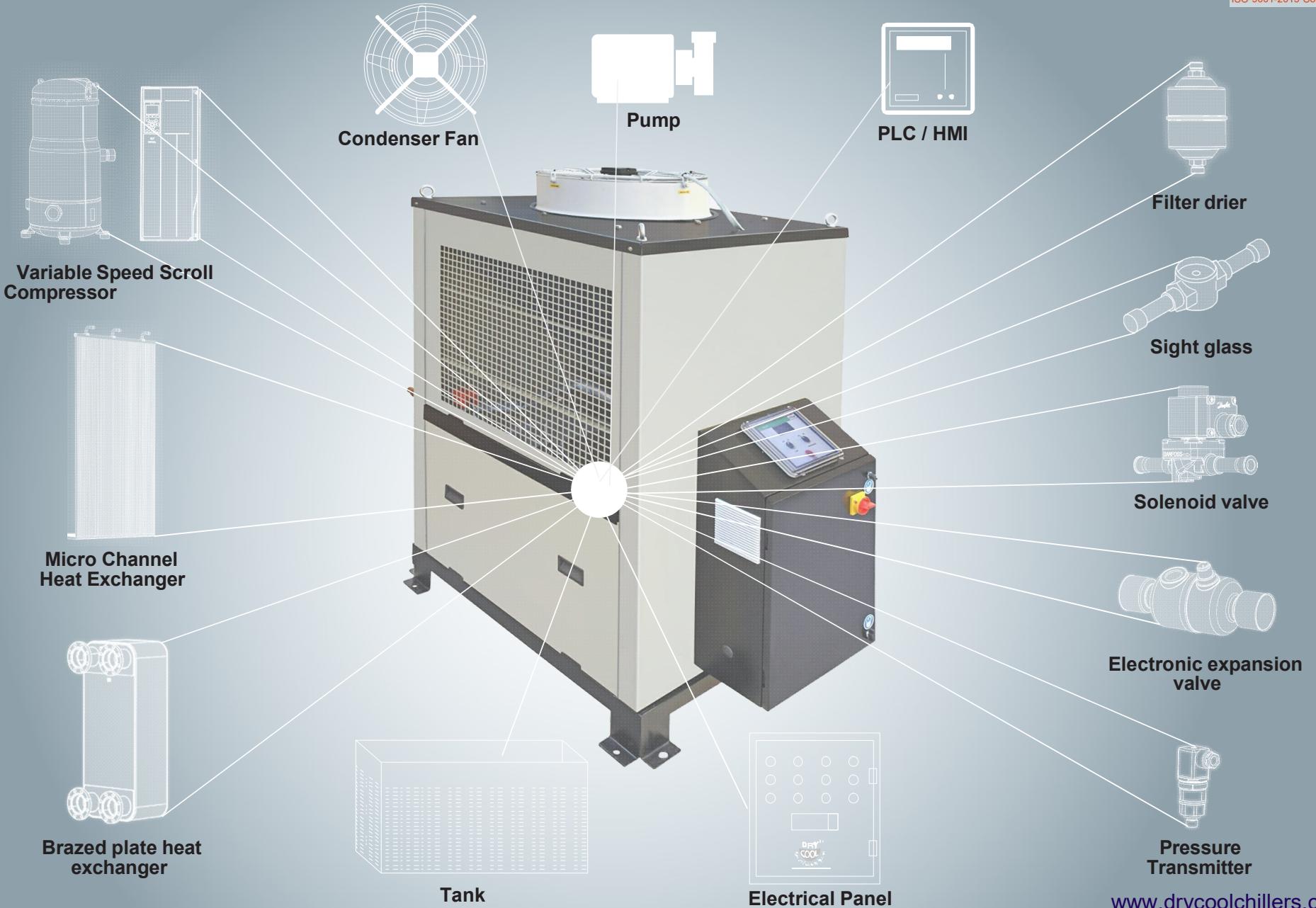
Reliable. Efficient. High Performance

Variable Speed Scroll Chillers (5 TR – 60 TR)

Achieve
35%
energy Savings



DRYCOOL Energy Efficient Technologies for Process Chillers



What we offer

Wide Capacity range - 15 to 100%

MPHE- Compact, Energy Efficient, less refrigerant Charge compared to BPHE

Pre-Qualified drive package- compressor safety functions embedded

Compressor Intermediate Discharge Valve- higher part load efficiency

Faster response to varying loads- Precise Temperature Control



7
Months payback Period

35%
Energy savings

30%
Smaller Footprint

50%
less refrigerants charge

One-Stop Solution
with best-in class domain expertise

75% Imported components IN
-lesser development time

Energy Labelling READY Chiller Design

Real-time monitoring through IoT

Model Option

Base

Example case of 5TR

5 TR Chiller Reference Conditions:

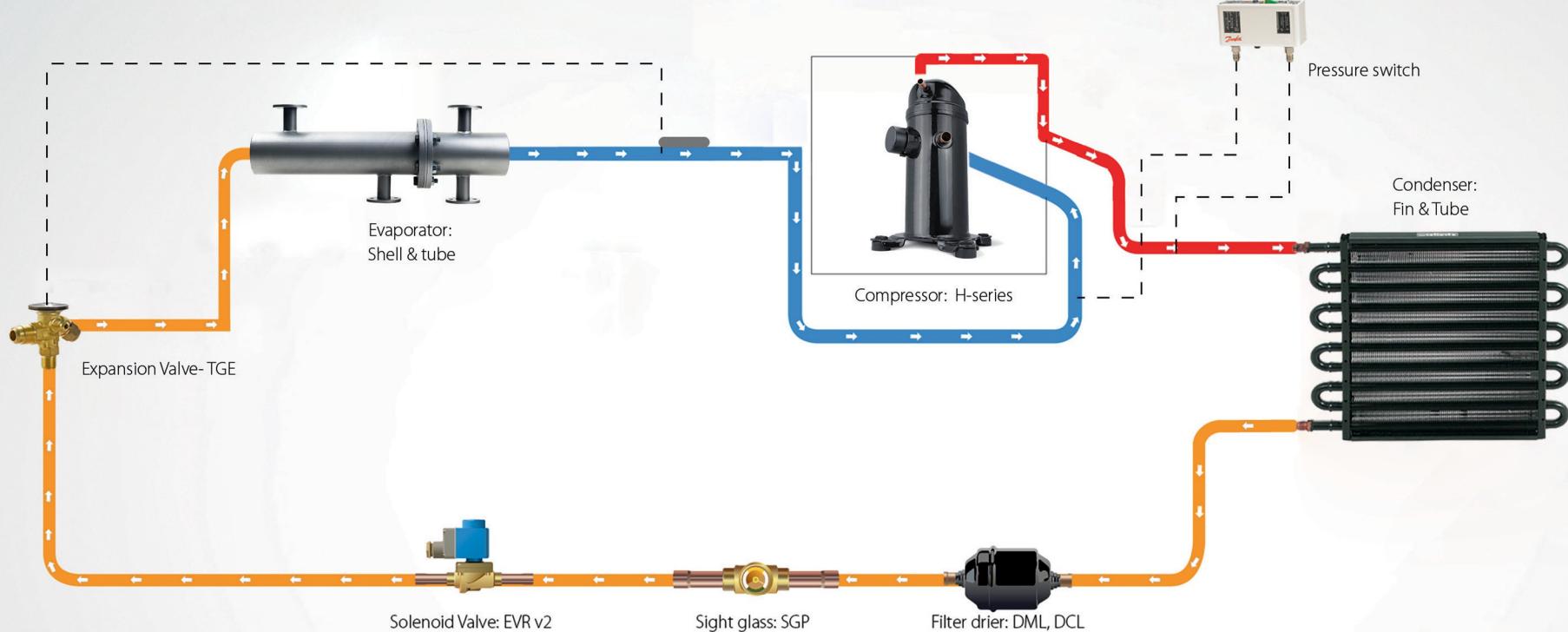
Evaporator loads: 5 TR Ambient air temperatures

- 39°C (6% of time)
- 32°C (48% of time)
- 26°C (36% of time)
- 20°C (10% of time)

Coolant Supply Target Temperature: 10°C

$$\text{ISEER} = A.COP_{100\%} + B.COP_{75\%} + C.COP_{50\%} + D.COP_{25\%}$$

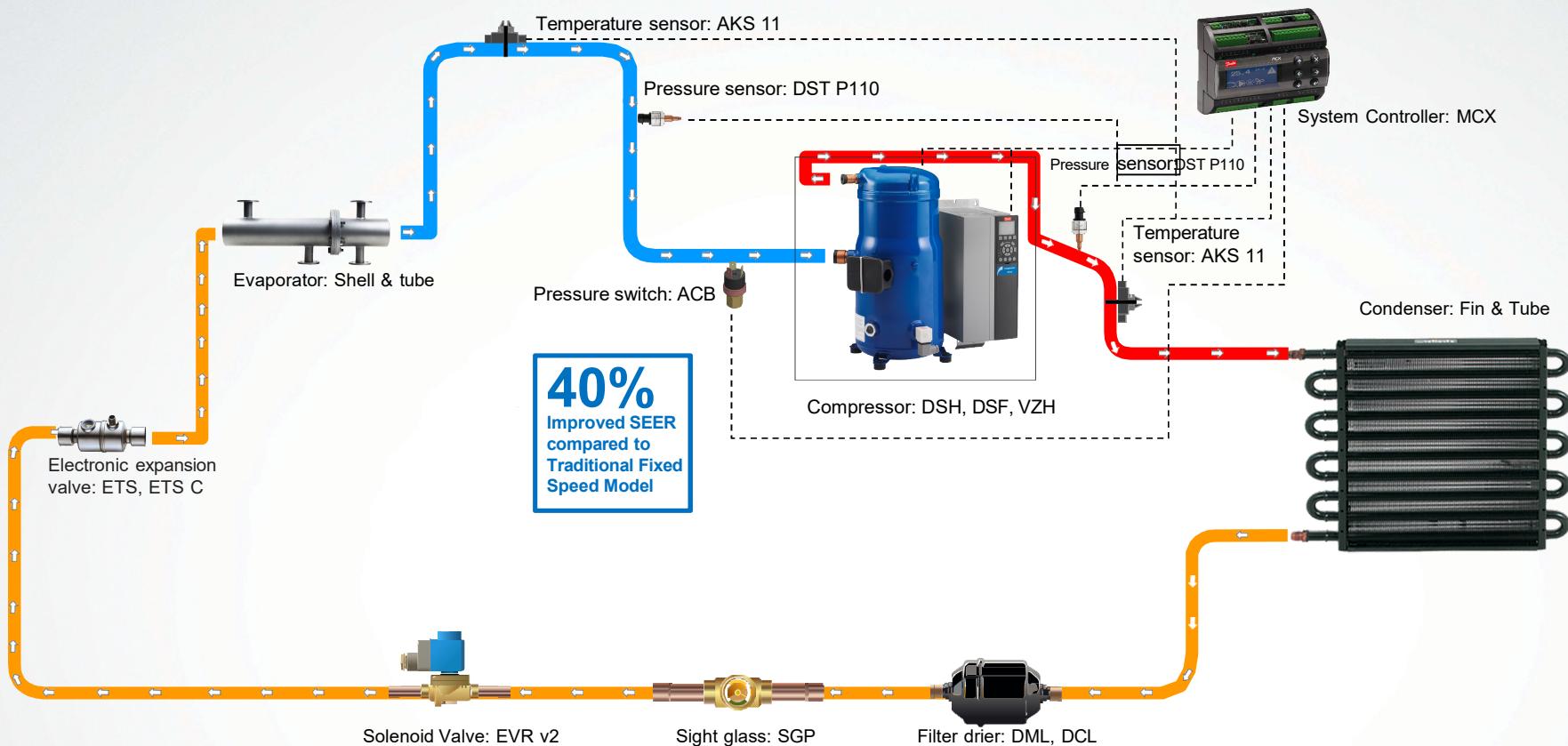
| Load Rate (%) | 100 | 75 | 50 | 25 |
|------------------------|-------|--------|--------|--------|
| Weighting Co-efficient | A = 6 | B = 48 | C = 36 | D = 10 |



Traditional Fixed Speed Chiller with R407C

Model Option

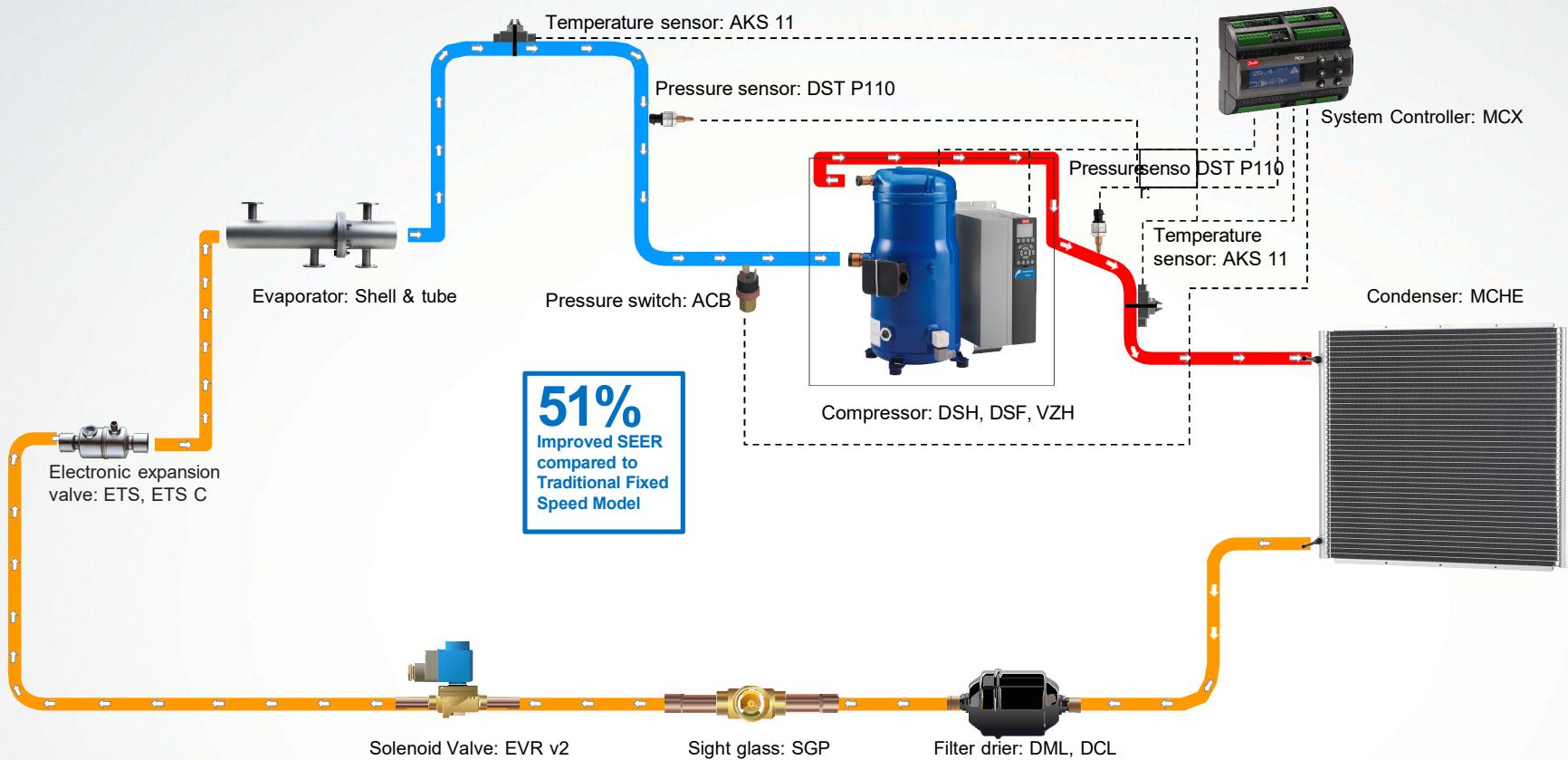
1



Chiller with Variable speed with R410A Compressor

Model Option

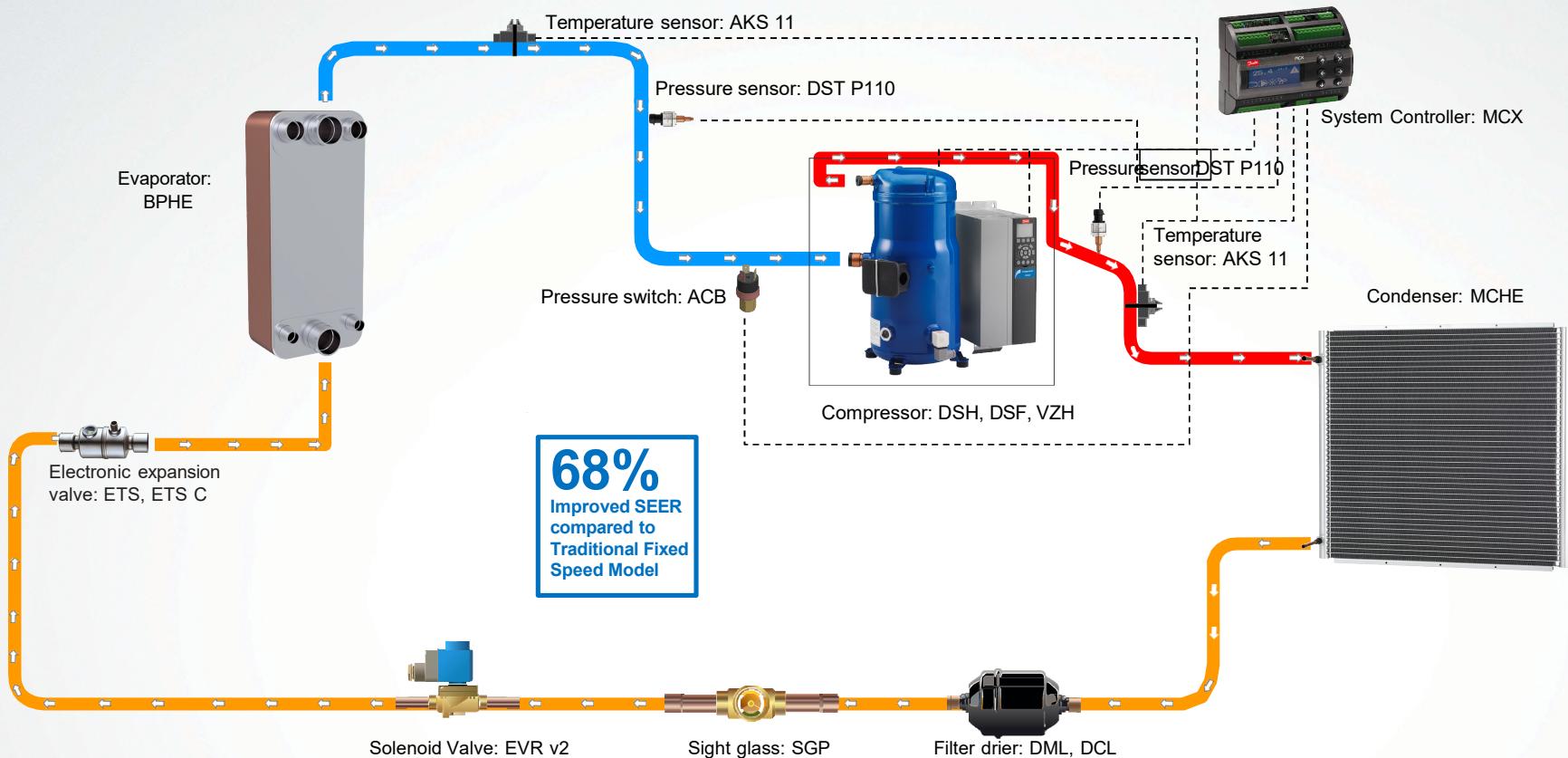
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Chiller with Variable speed Compressor + MCHE with R410A

Model Option

3



Chiller with Variable speed Compressor + MCHE + BPHE with R410A

Comparison of Various Model's ROI

Drycool Solution BOM list

| | | Model 1 | Model 2 | Model 3 |
|---|-------------|--|---|--|
| ROI (5TR Process Chiller) | Fixed Speed | Chiller with Variable Speed Compressor | Chiller with Variable Speed Compressor + Micro Channel Heat Exchanger | Chiller with Variable Speed Compressor + Micro Channel Heat Exchanger + Brazed Plate HEX |
| Additional Investment %age | Base | 40% additional cost to Base | 36% additional cost to Base | 33% additional cost to Base |
| SEER (Seasonal Energy Efficiency Ratio) | Base | 40% improvement to the base model | 51% improvement to the base model | 68% improvement to the base model |
| Energy Consumption per year, INR | Base | 18% less than Base | 27% less than Base | 35% less than Base |
| ROI, in months | | 15 | 9 | 7 |

Variable Speed + Micro Channel Heat Exchanger + Brazed Plate HEX



The Micro Channel HEX used instead of Fin-tube HEX in Condenser offers higher heat transfer efficiency, compactness of the system, and weight reduction in the overall system

Significantly less usage of refrigerant in Condenser

The Brazed plate HEX used instead of Shell-tube HEX in evaporator offers higher heat transfer efficiency, this leads to the compactness of the system, and weight reduction in the overall system

Significantly less usage of refrigerant in evaporator

Adaptable compressor speed leads to High part load efficiency of the system

Optimized superheat conditions regardless of load and/or evaporating temperature using EEV

Downsizing potential possibilities for Coolant storage tank

| S.No. | Description | Product | 5 TR | | 15 TR | |
|-------|---|--|------------|---|------------|---------|
| | | | Part Code | Product | Part Code | Product |
| 1 | Compressor | VZH035CG | 120G0258 | VZH088CG | 120G0189 | |
| | Minimum Capacity | 2.714 Kw | | 12.22 Kw | | |
| | Maximum Capacity | 20.23 Kw | | 51.61 Kw | | |
| 2 | Compressor Drive | CDS803, 8 kW | 134N4263 | CDS803P18KT4E20H2 | 136U4910 | |
| 3 | Drive Contol Panel | LCP | 132B0200 | LCP | 130B1107 | |
| 4 | Solenoid coil for Compressor | | | | 120Z0521 | |
| 5 | Crankcase heater | 65W 240V | 120Z0540 | 75W, 230V | 7773108 | |
| 6 | LP | KP1 | 060-110166 | KP1 | 060-110166 | |
| 7 | HP Switch | KP6W | 060-519066 | KP6W | 060-519066 | |
| 8 | Discharge Check Valve | NRV12 | 020B1012 | NRV16 | 020B1018 | |
| 9 | Shut off Ball Valve | GBC12 | 009L7052 | GBC22 | 009L7055 | |
| 10 | Filter Drier | DML054S | 023Z5101 | DML084 | 023Z5061 | |
| 12 | Sight Glass | SGP12s | 014L0183 | SGP22s | 014L1207 | |
| 13 | Solenoid Valve | EVR10 | 032L1217 | EVR20 | 032L1240 | |
| 14 | Expansion Valve | ETS6-25 | 034G5035 | ETS 8M 40 L-16 | 034G8806 | |
| 15 | Expansion Valve Coil | ETS6 COIL | 034G5115 | ETS 8M Coil | 034G8300 | |
| 16 | MCHE Condenser | MCHE Condenser 25.4X1.3X26 OM0032 I/27 | 021U0984 | MCHE Cond 25.4X1.3X26 DF0101 PEDI I/2 | 021U0093 | |
| 17 | Evaporator BPHE | B3-030-50-3.0-HQ(5TR,H5/8xH1-1/8xL3/4) | 021B2063 | B3-052-88-3.0-HQ(15TR,H5/8xH1-1/8xL 1-1/4A) | 021B3708 | |
| 18 | Fan Speed Regulator | RGE-Z1P6-7 (0.2 to 6A) Single | | RGE-X3R6-7 (0.2 to 5A) 3 Phase | | |
| S.No. | Hardware | | | | | |
| 1 | MCX061V Elect.Control 24V LCD RS485 S | | | 080G0251 | | |
| 2 | Water Temp Sensor | | | 080G0205 | | |
| 3 | Suction Temp Sensor | | | 080G0209 | | |
| 4 | Discharge Temp Sensor | | | 080G0212 | | |
| 5 | Suction Pressure DST P110 (-1 to 34 bar) | | | 075G1018 | | |
| 6 | Discharge Pressure DST P110 (0 to 50 bar) | | | 075G1020 | | |
| 7 | Connectors. round Packard cable 2.5 mtr | | | 060G8196 | | |

The BOM is provided for two preferred capacities 5TR and 13TR. But various chiller capacities up to 30TR can be built with single VS compressor



Drycool Energy Efficient Technologies

- For your Process Chillers

Global Expertise with Local Support



Ask the experts

Our dedicated team of experts are standing by to provide design support, technical expertise and customer service. Whatever you need to know about our solutions, we have the answers.

For more information, please visit www.drycoolchillers.com