SMCD Digital A2L refrigeration condensing units

- MEDIUM AND LOW TEMPERATURE
- APPLICATIONS
- DIGITAL COMPRESSORS FOR VARIABLE LOADS
- EC CONDENSER FANS
- MICRO-CHANNEL COILS
- RDM CONTROLS
- OIL SEPARATOR
- SUITABLE FOR BOTH A1 AND A2L REFRIGERANTS

SMCD Range

The SMCD range incorporates the YBD medium temperature and YFJ low temperature range of Copeland digital compressors.

The units maintain constant evaporating and condensing temperatures for varying loads making them ideal for multi-evaporator a wide range of applications such as convenience stores multiple cabinets with doors.

These condensing units are suitable for a range refrigerants, including A1 and A2L.

Suitable for a range of refrigerants including:-
A1 - R448A, R449A, R452A, R404A, R407A, R407F
A2L - R454A, R454C, R455A.

SMCD Features

- Fitted liquid receiver for pump down operation.
- Fitted sight glass & drier.
- Fitted crankcase heater.
- Fitted isolator
- Fitted suction and liquid service valves
- Fitted noise reducing insulation within the compressor compartment.
- Fitted adjustable auto reset LP switch and fixed auto reset HP switch 26Bar max working pressure.
- All units are 3ph with fitted contactor and overload.

Range of capacities
Medium temperature 4.5kW – 11kW @ -10°C
Evaporating and 32°C External ambient – R454C
Low temperature 4.0kW – 7.3kW @ -30°C
Evaporating and 32°C External ambient – R454C

Tier II Eco design compliant

Cat II PED Certified
Cat II PED with A2L Refrigerants
Cat I PED with A1 refrigerants

Easy access compressor section with separate electrics section keeping potentially sparking components away from refrigerant containing components.

SMCD Features

Controls
The SMCD incorporates low and high pressure transducers with RDM controller to maintain the system evaporating and condensing temperatures. This allows the store to incorporate the entire system into the RDM BMS network allowing remote access for monitoring, diagnostics and updates.

Oil Separator
Fitted Helical Oil Separator maintaining the compressor crankcase oil level and improving performance by reducing oil circulation around the system.

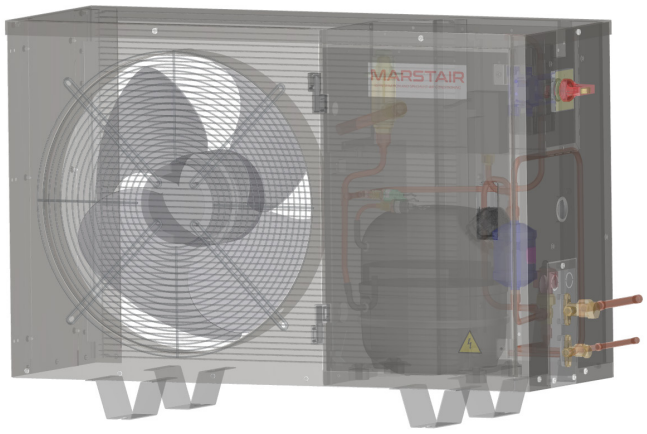
Microchannel Heat Exchanger
Higher efficiency heat exchanger with very low levels of refrigerant charge. Reducing refrigerant cost and helping A2L refrigerant application compliance by reducing the overall system LFL.

Low Noise EC condenser fan
Controlled by the RDM through a 0-10V signal, giving high energy efficiency and ensuring accurate condensing temperature control whilst the digital compressor modulates capacity.

Receiver and coil volume

Medium Temperature			
SMCD	Coil Volume	Receiver Volume	Total
50	0.9	4	4.9
90	1	7.5	8.5
100	1.6	7.5	9.1
150	1.6	7.5	9.1
180	2.2	7.5	9.7

Low Temperature			
SMCD	Coil Volume	Receiver Volume	Total
90	1	7.5	8.5
130	1.6	7.5	9.1
180	2.2	7.5	9.7



Dimensions and Weights
Unpacked Units

SMCD	50	90	100	130	150	180
Height mm	720	820	1080	1080	1080	1275
Width mm	1117	1117	1117	1117	1117	1117
Depth mm	350	425	425	425	425	425
Weight MT kg	72	84	98	N/A	111	126
Weight LT kg	N/A	86	N/A	111	N/A	128

Sound pressure levels (SPL) at 10m distance free field conditions @ 27°C external ambient

SMCD	50	90	100	130	150	180
dbA	33	37	38	37	37	39
NR	27	30	31	30	30	32

Performance Data

R454C

		Evaporating temperature				
SMCD 50		-20	-15	-10	-5	0
Ambient temperature YBD17K1E	27	3.10	3.90	4.83	5.93	7.22
	30	2.98	3.75	4.65	5.72	6.96
	32	2.91	3.64	4.53	5.57	6.79
	35	2.77	3.49	4.34	5.35	6.51
	38	2.63	3.33	4.14	5.12	6.25
	40	2.55	3.23	4.02	4.97	6.07
		Evaporating temperature				
SMCD 90		-20	-15	-10	-5	0
Ambient temperature YBD24K1E	27	4.09	5.13	6.36	7.81	9.50
	30	3.92	4.93	6.12	7.53	9.16
	32	3.82	4.79	5.96	7.33	8.94
	35	3.64	4.59	5.72	7.04	8.57
	38	3.46	4.39	5.45	6.74	8.23
	40	3.36	4.25	5.29	6.54	7.99
		Evaporating temperature				
SMCD 100		-20	-15	-10	-5	0
Ambient temperature YBD31K1E	27	5.11	6.42	7.95	9.76	11.88
	30	4.91	6.17	7.65	9.41	11.45
	32	4.78	5.99	7.45	9.16	11.17
	35	4.55	5.74	7.15	8.81	10.72
	38	4.33	5.49	6.82	8.43	10.29
	40	4.20	5.31	6.62	8.18	9.99
		Evaporating temperature				
SMCD 150		-20	-15	-10	-5	0
Ambient temperature YBD36K1E	27	6.06	7.61	9.43	11.58	14.09
	30	5.82	7.31	9.07	11.16	13.58
	32	5.67	7.10	8.84	10.86	13.25
	35	5.40	6.81	8.48	10.45	12.72
	38	5.13	6.51	8.09	10.00	12.21
	40	4.98	6.30	7.85	9.70	11.85
		Evaporating temperature				
SMCD 180		-20	-15	-10	-5	0
Ambient temperature YBD45K1E	27	7.54	9.47	11.74	14.42	17.54
	30	7.24	9.10	11.29	13.90	16.90
	32	7.06	8.84	11.00	13.52	16.50
	35	6.72	8.47	10.55	13.00	15.83
	38	6.39	8.10	10.07	12.45	15.20
	40	6.20	7.84	9.77	12.07	14.75

Performance Data

R454C

		Evaporating temperature				
SMCD 90 LT		-45	-40	-35	-30	-25
Ambient temperature YFJ10K1E	27		2.58	3.27	4.04	4.99
	30		2.56	3.23	4.00	4.96
	32		2.52	3.21	3.97	4.91
	35		2.49	3.17	3.95	4.86
	38			3.13	3.91	4.80
	40			3.10	3.87	4.76
		Evaporating temperature				
SMCD 130 LT		-45	-40	-35	-30	-25
Ambient temperature YFJ15K1E	27		3.77	4.78	5.91	7.30
	30		3.74	4.72	5.85	7.25
	32		3.68	4.69	5.80	7.18
	35		3.64	4.64	5.78	7.11
	38			4.58	5.72	7.02
	40			4.53	5.66	6.96
		Evaporating temperature				
SMCD 180 LT		-45	-40	-35	-30	-25
Ambient temperature YFJ19K1E	27		4.72	5.98	7.39	9.13
	30		4.68	5.91	7.32	9.08
	32		4.61	5.87	7.26	8.98
	35		4.56	5.80	7.23	8.89
	38			5.73	7.15	8.78
	40			5.67	7.08	8.71

Performance Data

R454A

		Evaporating temperature				
SMCD 50		-20	-15	-10	-5	0
Ambient temperature YBD17K1E	27	3.31	4.15	5.15	6.32	7.69
	30	3.18	3.99	4.95	6.09	7.41
	32	3.09	3.88	4.82	5.93	7.23
	35	2.95	3.71	4.62	5.70	6.94
	38	2.80	3.55	4.41	5.46	6.66
	40	2.72	3.44	4.28	5.29	6.46
		Evaporating temperature				
SMCD 90		-20	-15	-10	-5	0
Ambient temperature YBD24K1E	27	4.25	5.34	6.62	8.13	9.89
	30	4.08	5.13	6.37	7.83	9.53
	32	3.98	4.99	6.20	7.62	9.30
	35	3.79	4.78	5.95	7.33	8.92
	38	3.60	4.57	5.68	7.02	8.57
	40	3.50	4.42	5.51	6.81	8.32
		Evaporating temperature				
SMCD 100		-20	-15	-10	-5	0
Ambient temperature YBD31K1E	27	5.38	6.76	8.38	10.29	12.52
	30	5.17	6.50	8.06	9.92	12.07
	32	5.04	6.31	7.85	9.65	11.78
	35	4.80	6.05	7.53	9.28	11.30
	38	4.56	5.78	7.19	8.88	10.85
	40	4.43	5.60	6.97	8.62	10.53
		Evaporating temperature				
SMCD 150		-20	-15	-10	-5	0
Ambient temperature YBD36K1E	27	6.47	8.13	10.08	12.37	15.05
	30	6.22	7.81	9.70	11.93	14.51
	32	6.06	7.59	9.44	11.61	14.16
	35	5.77	7.27	9.06	11.16	13.59
	38	5.49	6.95	8.64	10.68	13.04
	40	5.33	6.73	8.39	10.36	12.66
		Evaporating temperature				
SMCD 180		-20	-15	-10	-5	0
Ambient temperature YBD45K1E	27	8.02	10.08	12.49	15.34	18.66
	30	7.71	9.68	12.02	14.78	17.98
	32	7.51	9.41	11.70	14.39	17.55
	35	7.15	9.01	11.23	13.83	16.84
	38	6.80	8.62	10.71	13.24	16.17
	40	6.60	8.34	10.40	12.85	15.69

Performance Data

R454A

		Evaporating temperature				
SMCD 90 LT		-45	-40	-35	-30	-25
Ambient temperature YFJ10K1E	27		2.77	3.51	4.34	5.36
	30		2.75	3.47	4.30	5.33
	32		2.71	3.45	4.27	5.28
	35		2.68	3.41	4.25	5.22
	38			3.36	4.20	5.16
	40			3.33	4.16	5.12
		Evaporating temperature				
SMCD 130 LT		-45	-40	-35	-30	-25
Ambient temperature YFJ15K1E	27		4.05	5.13	6.34	7.83
	30		4.02	5.07	6.28	7.79
	32		3.96	5.04	6.23	7.71
	35		3.91	4.98	6.20	7.63
	38			4.91	6.14	7.54
	40			4.87	6.08	7.47
		Evaporating temperature				
SMCD 180 LT		-45	-40	-35	-30	-25
Ambient temperature YFJ19K1E	27		5.07	6.43	7.94	9.81
	30		5.03	6.35	7.86	9.75
	32		4.95	6.31	7.80	9.65
	35		4.89	6.23	7.76	9.55
	38			6.15	7.69	9.44
	40			6.09	7.61	9.36

Performance Data

R455A

		Evaporating temperature				
SMCD 50		-20	-15	-10	-5	0
Ambient temperature YBD17K1E	27	3.70	4.65	5.76	7.08	8.61
	30	3.56	4.47	5.55	6.82	8.30
	32	3.47	4.34	5.40	6.64	8.10
	35	3.30	4.16	5.18	6.39	7.77
	38	3.14	3.98	4.94	6.11	7.46
	40	3.05	3.85	4.80	5.93	7.24
		Evaporating temperature				
SMCD 90		-20	-15	-10	-5	0
Ambient temperature YBD24K1E	27	4.79	6.02	7.46	9.16	11.15
	30	4.60	5.79	7.18	8.83	10.74
	32	4.49	5.62	6.99	8.60	10.49
	35	4.27	5.38	6.71	8.27	10.06
	38	4.06	5.15	6.40	7.91	9.66
	40	3.94	4.98	6.21	7.67	9.38
		Evaporating temperature				
SMCD 100		-20	-15	-10	-5	0
Ambient temperature YBD31K1E	27	6.08	7.64	9.47	11.63	14.14
	30	5.84	7.34	9.11	11.21	13.63
	32	5.69	7.13	8.87	10.91	13.31
	35	5.42	6.83	8.51	10.49	12.77
	38	5.15	6.53	8.12	10.04	12.26
	40	5.00	6.32	7.88	9.74	11.90
		Evaporating temperature				
SMCD 150		-20	-15	-10	-5	0
Ambient temperature YBD36K1E	27	7.34	9.22	11.42	14.03	17.06
	30	7.05	8.86	10.99	13.52	16.45
	32	6.87	8.60	10.70	13.16	16.05
	35	6.54	8.24	10.27	12.65	15.40
	38	6.22	7.88	9.80	12.11	14.78
	40	6.04	7.63	9.51	11.75	14.35
		Evaporating temperature				
SMCD 180		-20	-15	-10	-5	0
Ambient temperature YBD45K1E	27	9.05	11.37	14.09	17.30	21.05
	30	8.70	10.93	13.56	16.68	20.29
	32	8.47	10.61	13.20	16.23	19.80
	35	8.07	10.17	12.66	15.61	19.00
	38	7.67	9.72	12.09	14.94	18.24
	40	7.45	9.41	11.73	14.49	17.70

Performance Data

R455A

		Evaporating temperature				
SMCD 90 LT		-45	-40	-35	-30	-25
Ambient temperature YFJ10K1E	27		3.16	4.00	4.95	6.11
	30		3.13	3.95	4.90	6.07
	32		3.09	3.93	4.86	6.01
	35		3.05	3.88	4.84	5.95
	38			3.83	4.79	5.88
	40			3.80	4.74	5.83
		Evaporating temperature				
SMCD 130 LT		-45	-40	-35	-30	-25
Ambient temperature YFJ15K1E	27		4.62	5.86	7.24	8.94
	30		4.59	5.79	7.17	8.88
	32		4.51	5.75	7.11	8.80
	35		4.46	5.68	7.08	8.71
	38			5.61	7.00	8.60
	40			5.55	6.93	8.53
		Evaporating temperature				
SMCD 180 LT		-45	-40	-35	-30	-25
Ambient temperature YFJ19K1E	27		5.78	7.32	9.05	11.18
	30		5.73	7.23	8.96	11.11
	32		5.64	7.19	8.89	11.00
	35		5.58	7.10	8.85	10.89
	38			7.01	8.76	10.75
	40			6.94	8.67	10.66

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