Copeland ZX outdoor refrigeration units

XCM25D Controller parameter list

Copeland ZX outdoor refrigeration units are equipped with an XCM25D electronic controller from Copeland Controls. The controller design allows the installer to start and operate the system with minimum effort in terms of controller adjustments. The most important controller settings are described in the application guidelines and most likely there is no need to change those settings.

In case of special applications additional parameters might have to be adjusted according to those special needs. This document contains the full list of available parameters in the XCM25D controller. It is not a user's manual. For questions about how to handle the controller and for functionality description please refer to the dedicated documentation available at www.copeland.com/en-gb.

Table colour code for parameter access

Parameter in level 1 (L1, accessible without password)
Parameter in level 2 (L2, accessible with password = 3 2 1)
Parameter not accessible (N.V.)

For example: C01 is accessible at level 2 with ZXDE, and at level 1 with ZXME and ZXLE.

***NOTE:* When changing parameters C01, C02 and C05, a reset of the controller (interruption of power supply) is required.**

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
A01	Probe P1 configuration	Not used (0-NU) Suction pressure (0-5V) (1-SUP)	**SUP**	**SUP**	**SUP**
A02	Start of scaling for probe 1 (0-5V)	0-5 V: -1.5 to P1E bar; -21 to P1E PSI	**0**	**0**	**0**
A03	End of scaling for probe 1 (0-5V)	0-5 V: P1i to 99.9 bar; P1i to 999 PSI	**15**	**15**	**15**
A04	Probe P1 calibration	0-5 V: -12.0 to 12.0 bar; -12.0 to12.0 PSI	**0**	**0**	**0**
A05	Probe P1 reading error delay (P1C = 0-5V)	0 to 255 min	**5**	**5**	**5**
A06	Probe P2 configuration	Not used (0-NU) Mid-coil temperature (NTC10K) (1-MCT) Mid-coil pressure (0-5V) (2-MCP)	**MCP**	**MCP**	**MCP**
A07	Start of scaling for probe 2	0-5 V: -1.5 to P2E bar; -21 to P2E PSI NTC10K: -40 to P2E °C	**0**	**0**	**0**

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
A08	End of scaling for probe 2	0-5 V: P2i to 99.9 bar; P2i to 999 PSI NTC10K: P2i to 110 °C	**35**	**35**	**35**
A09	Probe P2 calibration	0-5V: -12.0 to 12.0 bar; -12.0 to 12.0 PSI NTC10K: -12 to 12 °C	**0**	**0**	**0**
A10	Probe P2 reading error delay (P2C=0-5V)	0 to 255 min	**0**	**0**	**0**
A11	Probe P3 configuration	Not used (0-NU) Discharge line temperature (1-DLT)	**DLT**	**DLT**	**DLT**
A12	Probe P3 calibration	-12 to 12 °C	**0**	**0**	**0**
A13	Probe P4 configuration	Not used (0-NU) Ambient temperature (NTC10K) (1-AMT) Thermostat temperature (NTC10K) (2-TMT) Vapour inlet temperature (NTC10K) (3-UIT) Vapour outlet temperature (NTC10K) (4-UOT) Evaporator temperature (NTC10K) (5-EPT) Liquid temperature (NTC10K) (6-LLT) Suction line temperature (7-SLT) Coil temperature (8-COT)	**NU**	**NU**	**UIT**
A14	Probe P4 calibration	-12 to 12 °C	**0**	**0**	**0**
A15	Probe P5 configuration	Not used (0-NU) Ambient temperature (NTC10K) (1-AMT) Thermostat temperature (NTC10K) (2-TMT) Vapour inlet temperature (NTC10K) (3-UIT) Vapour outlet temperature (NTC10K) (4-UOT) Evaporator temperature (NTC10K) (5-EPT) Liquid temperature (NTC10K) (6-LLT) Suction line temperature (7-SLT) Coil temperature (8-COT)	**NU**	**NU**	**UOT**
A16	Probe P5 calibration	-12 to 12 °C	**0**	**0**	**0**
A17	Probe P6 configuration	Not used (0-NU) Ambient temperature (NTC10K) (1-AMT) Thermostat temperature (NTC10K) (2-TMT) Vapour inlet temperature (NTC10K) (3-UIT) Vapour outlet temperature (NTC10K) (4-UOT) Evaporator temperature (NTC10K) (5-EPT) Liquid temperature (NTC10K) (6-LLT) Suction line temperature (7-SLT) Coil temperature (8-COT)	**AMT**	**AMT**	**AMT**
A18	Probe P6 calibration	-12 to 12 °C	**0**	**0**	**0**

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
A19	Probe P7 configuration	Not used (0-NU) Ambient temperature (NTC10K) (1-AMT) Thermostat temperature (NTC10K) (2-TMT) Vapour inlet temperature (NTC10K) (3-UIT) Vapour outlet temperature (NTC10K) (4-UOT) Evaporator temperature (NTC10K) (5-EPT) Liquid temperature (NTC10K) (6-LLT) Suction line temperature (7-SLT) Coil temperature (8-COT)	**NU**	**NU**	**NU**
A20	Probe P7 calibration	-12 to 12 °C	**0**	**0**	**0**
A21	Delay before activating probe error	0 to 255 sec	**0**	**0**	**0**
B01	Measurement unit for pressure	Bar (0-BAR) – PSI (1-PSI) – KPA (2-TPA)	**bar**	**bar**	**bar**
B02	Measurement unit for temperature	°C (0-C)	**°C**	**°C**	**°C**
B03	Remote display visualization	P1 (0-P1) - P2 (1-P2) - P3 (2-P3) P4 (3-P4) - P5 (4-P5) - P6 (5-P6) P7 (6-P7) - Per (7-PER) - Aou (8-AOU)	**P1**	**P1**	**P1**
B04	Filter enabling for probe reading	n (0-NO) - Y (1-YES)	**YES**	**YES**	**YES**
B05	Coefficient for probe reading filter (0 = max,100 = disable)	0 to 100, mEd (101)	**50**	**50**	**50**
C01	Compressor cut-in pressure setpoint	CoU to US	**4**	**4**	**1**
C02	Compressor cut-out pressure setpoint	LS to Cin	**2**	**2**	**0**
C03	Minimum setpoint for suction pressure/temperature	P1i to US; -50.0 to US °C	**0.6**	**0.6**	**0.3**
C04	Maximum setpoint for suction pressure/temperature	LS to P1E; LS to 60.0 °C	**7.2**	**7.2**	**6.5**
C05	Compressor regulation probe selection	NU (0-NU) Suction pressure probe (1-SUP) Case temperature (2-CST) Suction pressure switch (3-dIS)	**SUP**	**SUP**	**SUP**
C06	EXV closing time before compressor off	0 to 999 sec	**0**	**0**	**5**
C07	Refrigerant selection for regulation	R404A (0-404) - R507 (1-507) R134a (2-134) - R22 (3-R22) R407C (4-07C) - R407A (5-07A) R407F (6-07F) - R448A (7-48A) R449A (8-49A)	**404**	**404**	**404**

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
C08	Setpoint offset	Not used (0-NU) Small offset (1-SOF) Medium offset (2-MOF) Large offset (3-LOF) LAO (4-FOF)	NU	NU	NU
C09	Ambient temperature operation setpoint	-40 to 110 °C	-20 °C	-20 °C	-20 °C
C10	Pressure/Temperature operation for ambient differential	0.0 to 9.9 bar; 0.0 to 99.9 PSI 0.0 to 25.5 °C	1	1	1
C11	Ambient temperature recover differential	0.1 to 25.5 °C	5 °C	5 °C	5 °C
C12	Ambient temperature threshold for low ambient operation	-40 to 110 °C	0 °C	0 °C	0 °C
C13	Temperature/Pressure to end low ambient timer and resume normal operation	-40 to 110 °C -1.5 to 99.9 bar; -21 to 999 PSI	10 °C	10 °C	10 °C
C14	Compressor minimum on time in low ambient operation	0 to 255 sec	2	2	2
C15	Pressure to end low ambient timer and shut off the compressor	-1.5 to 99.9 bar; -21.0 to 999 PSI	0	0	0
C16	Digital compressor setpoint	LS to US	3.3 bar	N.V.	N.V.
C17	Proportional band for compressor regulation	0.1 to 9.9 bar; 0.1 to 99.9 PSI; 0.1 to 25.5 °C	2 bar	N.V.	N.V.
C18	Band offset for compressor regulation	0 to 9.9 bar; 0 to 99.9 PSI; 0.0 to 25.5 °C	0 bar	N.V.	N.V.
C19	Integral time	0 to 999 sec	250 sec	N.V.	N.V.
C20	Start-up time: interval time with digital valve energized before regulation starts	0.0 to 10.0 sec	10 sec	N.V.	N.V.
C21	Cycle time for digital compressor	10 to 40 sec	20 sec	N.V.	N.V.
C22	Safety value for PI regulator (in case of probe error)	0 to 100 %	50 %	N.V.	N.V.
C23	Number of active compressor(s) when probe error	0 (0) – 1 (1) – 2 (2)	0	N.V.	N.V.
C24	Minimum capacity for digital compressor	0 to PMA	20 %	N.V.	N.V.
C25	Maximum capacity for digital compressor	PMi to 100	100 %	N.V.	N.V.
C26	Time with digital compressor at PMA before starting another load	0 to 255 sec	0 sec	N.V.	N.V.
C27	Time with digital compressor at PMi before switching off another load	0 to 255 sec	0 sec	N.V.	N.V.
C28	R404A Enable function	Disable (0-NO) - Enable (1-YES)	YES	YES	YES
C29	R507 Enable function	Disable (0-NO) - Enable (1-YES)	YES	YES	YES
C30	R134a Enable function	Disable (0-NO) - Enable (1-YES)	YES	YES	NO

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
C31	R22 Enable function	Disable (0-NO) - Enable (1-YES)	YES	YES	YES
C32	R407C Enable function	Disable (0-NO) - Enable (1-YES)	YES	YES	YES
C33	R407A Enable function	Disable (0-NO) - Enable (1-YES)	YES	YES	YES
C34	R407F Enable function	Disable (0-NO) - Enable (1-YES)	YES	YES	YES
C35	R448A Enable function	Disable (0-NO) - Enable (1-YES)	YES	YES	YES
C36	R449A Enable function	Disable (0-NO) - Enable (1-YES)	YES	YES	YES
C37	R410A Enable function	Disable (0-NO) - Enable (1-YES)	NO	NO	NO
C38	Compressor regulation control signal	Pressure (0-PRS) - Temperature (1-TMP)	PRS	PRS	PRS
D01	Output delay at start-up	0 to 255 sec	5 sec	5 sec	5 sec
D02	Compressor On time with faulty probe	0 to 255 min	0 min	0 min	0 min
D03	Compressor Off time with faulty probe	0 to 255 min	0 min	0 min	0 min
D04	Minimum time between two starts (same compressor)	0 to 15 min	4 min	4 min	4 min
D05	Delay between compressor switch-off and start-up (same compressor)	1 to 900 sec	120 sec	120 sec	120 sec
D06	Delay between two different loads start-up	[0÷99.5] min, resolution 10 sec	0	0	10
D07	Delay between two different loads switch-off	[0÷99.5] min, resolution 10 sec	0	0	10
D08	Minimum time a stage stays switched on	[0÷99.5] min, resolution 10 sec	0 sec	0 sec	0 sec
D09	Maximum time a stage stays switched on	[0.00÷24.00] hours, resolution 10 min	00:00	00:00	00:00
D10	don delay enabled also for the first request	No (0-NO) - Yes (1-YES)	NO	NO	NO
D11	doF delay enable also for the first switching off	No (0-NO) - Yes (1-YES)	NO	NO	NO
D12	Low suction pressure alarm delay	0 to 999 sec	0 sec	0 sec	0 sec
D13	Low suction pressure error signal enabling	No (0-NO) - Yes (1-YES)	YES	YES	YES
D14	Compressor minimum off time for high-pressure switch protection	0 to 15 min	5 min	5 min	5 min
D15	Number of high-pressure switch activations before compressor lockout	0 to 15	7	7	7
D16	Bump start enable	No (0-NO) - Yes (1-YES)	NO	NO	NO
D17	Bump start ambient threshold	-40 to 110 °C	0 °C	0 °C	0 °C
D18	Compressor stop time for next bump start	0 hour to 23 hours and 50 minutes	1:00	1:00	1:00
D19	Compressor on time during bump function	1 to 15 sec	2 sec	2 sec	2 sec
D20	Compressor off time during bump function	1 to 15 sec	15 sec	15 sec	15 sec

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
D21	Number of cycles during bump start	1 to 15	3	3	3
D22	DLT alarm temperature to stop compressor	-40 to 180 °C	140 °C	140 °C	140 °C
D23	DLT alarm recover temperature to turn on compressor	-40 to 180 °C	90 °C	90 °C	90 °C
D24	DLT alarm activation delay	0 to 255 sec	30 sec	30 sec	30 sec
D25	Compressor minimum off time for DLT Alarm	0 to 255 min	5 min	5 min	5 min
D26	Number of DLT alarm activations before compressor lockout	0 to 15	10	10	10
D27	Time to ignore low DLT sensor error at start-up	0 to 255 min	5 min	5 min	5 min
D28	Compressor minimum off time for low-pressure switch protection	0 to 15 min	3 min	3 min	3 min
D29	Low-pressure alarm value (from serial number 16EZ08855M onwards)	0 to 15 bar	0.5	0.5	0.1
D30	Cold start enable	Disable (0) - Enable (1)	0	0	0
D31	DLT temperature threshold to trip during cold start	-40 to 180 °C	60 °C	60 °C	60 °C
D32	Suction pressure threshold to trip during cold start	-1.5 to 99.9 bar	0.5 bar	0.5 bar	0.5 bar
D33	Allowed number of cycles of DLT temperature trips during cold start	1 to 15	4	4	4
D34	Allowed number of cycles of low-pressure trips during cold start	1 to 15	4	4	4
D35	Compressor stop time during cold start	1 to 999 sec	180 sec	180 sec	180 sec
E01	Condenser fan motor modulation type	Not used (0-NU) Fan cycling (1-CYC) Modulated fan (2-MOD)	MOD	MOS	MOD
E02	Low setpoint for condenser fan map 1 (for R404A, R507)	-40 to HT1 °C	10 °C	10 °C	10 °C
E03	Lower suction pressure point for condenser fan map 1 (for R404A, R507)	-1.5 to HP1 bar; -21 to HP1 PSI	3.3 bar	3.3 bar	3.3 bar
E04	High setpoint for condenser fan map 1 (for R404)	LT1 to 110 °C	30 °C	30 °C	30 °C
E05	High suction pressure point for condenser fan map 1 (for R404A, R507)	LP1 to 99.9 bar; LP1 to 999 PSI	7.2	6.5	6.5
E06	Low setpoint for condenser fan map 2 (for R134)	-40 to HT2 °C	25	10	25
E07	Lower suction pressure point for condenser fan map 2 (for R404)	-1.5 to HP2 bar; -21 to HP2 PSI	2.5	1.4	2.5
E08	High setpoint for condenser fan map 2 (for R134)	LT2 to 110 °C	40	30	40

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
E09	High suction pressure point for condenser fan map 2 (for R404)	LP2 to 99.9 bar; LP2 to 999 PSI	**3.9**	**3.9**	**3.9**
E10	Low setpoint for condenser fan map 3 (for R22)	-40 to HT3 °C	**20**	**20**	**28**
E11	Low suction pressure point for condenser fan map 3 (for R22)	-1.5 to HP3 bar; -21 to HP3 PSI	**5.2**	**5.2**	**2.5**
E12	High setpoint for condenser fan map 3 (for R22)	LT3 to 110 °C	**30**	**30**	**28**
E13	High suction pressure point for condenser fan map 3 (for R22)	LP3 to 99.9 bar; LP3 to 999 PSI	**6.4**	**6.4**	**4**
E14	Low setpoint for condenser fan map 4 (for R407C)	-40 to HT4 °C	**10**	**10**	**10**
E15	Lower suction pressure point for condenser fan map 4 (for R404)	-1.5 to HP4 bar; -21 to HP4 PSI	**1.3**	**2.2**	**2.2**
E16	High setpoint for condenser fan map 4 (for R407C)	LT4 to 110 °C	**38**	**30**	**30**
E17	High suction pressure point for condenser fan map 4 (for R404)	LP4 to 99.9 bar; LP4 to 999 PSI	**5.4**	**5.4**	**4.8**
E18	Low setpoint for condenser fan map 5 (for R407A)	-40 to HT5 °C	**10**	**10**	**10**
E19	Low suction pressure point for condenser fan map 5 (for R407A)	-1.5 to HP5 bar; -21 to HP5 PSI	**2.5**	**2.5**	**2.5**
E20	High setpoint for condenser fan map 5 (for R407A)	LT5 to 110 °C	**27**	**35**	**30**
E21	High suction pressure point for condenser fan map 5 (for R407A)	LP5 to 99.9 bar; LP5 to 999 PSI	**5.3**	**5.3**	**5.3**
E22	Low setpoint for condenser fan map 6 (for R407F)	-40 to HT6 °C	**10**	**10**	**10**
E23	Low suction pressure point for condenser fan map 6 (for R407F)	-1.5 to HP6 bar; -21 to HP6 PSI	**1.7**	**2.6**	**2.6**
E24	High setpoint for condenser fan map 6 (for R407F)	LT6 to 110 °C	**38**	**30**	**30**
E25	High suction pressure point for condenser fan map 6 (for R407F)	LP6 to 99.9 bar; LP6 to 999 PSI	**6.3**	**6.3**	**6.3**
E26	Low setpoint for condenser fan map 7 (for R448A)	-40 to HT7 °C	**10**	**10**	**10**
E27	Low suction pressure point for condenser fan map 7 (for R448A)	-1.5 to HP7 bar; -21 to HP7 PSI	**3.3**	**3.3**	**3.3**
E28	High setpoint for condenser fan map 7 (for R448A)	LT7 to 110 °C	**30**	**30**	**30**
E29	High suction pressure point for condenser fan map 7 (for R448A)	LP7 to 99.9 bar; LP7 to 999 PSI	**7.2**	**7.2**	**6.5**
E30	Low setpoint for condenser fan map 8 (for R449A)	-40 to HT8 °C	**10**	**10**	**10**
E31	Low suction pressure point for condenser fan map 8 (for R449A)	-1.5 to HP8 bar; -21 to HP8 PSI	**3.3**	**3.3**	**3.3**

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
E32	High setpoint for condenser fan map 8 (for R449A)	LT8 to 110 °C	30	30	30
E33	High suction pressure point for condenser fan map 8 (for R449A)	LP8 to 99.9 bar; LP8 to 999 PSI	7.2	6.5	6.5
E34	Low setpoint for condenser fan map 9 (for R410A)	-40 to HT9 °C	10	10	10
E35	Low suction pressure point for condenser fan map 9 (for R410A)	-1.5 to HP9 bar; -21 to HP9 PSI	3.3	3.3	3.3
E36	High setpoint for condenser fan map 9 (for R410A)	LT9 to 110 °C	30	30	30
E37	High suction pressure point for condenser fan map 9 (for R410A)	LP9 to 99.9 bar; LP9 to 999 PSI	7.2	7.2	7.2
E38	Fan setpoint modulation enabling	No (0-NO) - Yes (1-YES)	NO	NO	NO
E39	Condenser temperature setpoint when fan setpoint modulation is disabled	-40 to 110 °C	27 °C	27 °C	27 °C
E40	Minimum condenser temperature setpoint	-40 to 110 °C	10	10	10
E41	High ambient fan motor override enabled	No (0-NO) - Yes (1-YES)	YES	YES	YES
E42	High ambient fan motor override differential	0.1 to 25.5 °C	5	5	5
E43	High DLT fan motor override enabled	No (0-NO) - Yes (1-YES)	YES	YES	YES
E44	High DLT fan motor override differential	-40 to 180 °C	120	120	120
E45	Minimum fan motor speed	0 to 100 %	40	40	40
E46	Regulation band of variable fan	0.1 to 25.5 °C	10	10	10
E47	Integration time for fan	0 to 999 sec	500	500	500
E48	Fan full speed duration at fan start-up	0 to 255 sec	0	0	0
E49	Fan minimum on time	0 to 255 sec	5	5	5
E50	Fan minimum off time	0 to 255 sec	10	10	10
E51	Fixed condenser fan setpoint	-40 to 110 °C	23	23	23
E52	Fan 1 differential	0.1 to 25.5 °C	7	7	7
E53	Fan 1 to fan 2 differential	0.1 to 25.5 °C	10	10	10
E54	Fan 2 differential	0.1 to 25.5 °C	7	7	7
E55	Fan control with ambient sensor - Min ambient	-40 to E56 °C	0	0	0
E56	Fan control with ambient sensor - Max ambient	E55 to 110 °C	20	20	20
E57	Fan speed control with ambient sensor	0 to 100 %	60	60	60
E58	Condenser temperature/pressure threshold for high alarm	-40 to 110 °C -1.5 to 99.9 bar; -21 to 999 PSI	27.8	27	27

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
E59	High condenser temperature alarm delay	0 to 255 min	0	0	0
E60	High condenser temperature alarm with compressor off	No (0-NO) - Yes (1-YES)	YES	YES	YES
E61	Condenser temperature/pressure threshold for alarm recovery	-40 to E58 °C -1.5 to E58 bar; -21 to E58 PSI	23	23	23
F01	Liquid injection setpoint	-40 to 180 °C	130	130	130
F02	Max DLT temperature before full open injection	LiS to 180 °C	137	137	137
F03	Min DLT temperature before close injection	-40 to LiS °C	40	40	40
F04	Mid-coil limp-along for DLT failure - Mid-coil 1	LA2 to 110 °C	60	60	60
F05	Mid-coil limp-along for DLT failure - Mid-coil 2	LA3 to LA1	50	50	50
F06	Mid-coil limp-along for DLT failure - Mid-coil 3	LA4 to LA2	40	40	40
F07	Mid-coil limp-along for DLT failure - Mid-coil 4	LA5 to LA3	30	30	30
F08	Mid-coil limp-along for DLT failure - Mid-coil 5	-40 to LA4 °C	20	20	20
F09	Mid-coil limp-along for DLT failure - Valve opening 1	LE2 to 100 %	100	100	10
F10	Mid-coil limp-along for DLT failure - Valve opening 2	LE3 to LE1 %	80	80	80
F11	Mid-coil limp-along for DLT failure - Valve opening 3	LE4 to LE2 %	60	60	60
F12	Mid-coil limp-along for DLT failure - Valve opening 4	LE5 to LE3 %	35	35	35
F13	Mid-coil limp-along for DLT failure - Valve opening 5	0 to LE4 %	15	15	15
F14	Ambient limp-along for DLT and mid-coil failure - Temperature 1	MA2 to 110 °C	30	30	30
F15	Ambient limp-along for DLT and mid-coil failure - Temperature 2	-40 to MA1 °C	20	20	20
F16	Ambient limp-along for DLT and mid-coil failure - Valve opening 1	ME2 to 100 %	80	80	80
F17	Ambient limp-along for DLT and mid-coil failure - Valve opening 2	0 to ME1 %	35	35	35
F18	EVI EXV initial opening – Ambient 1	EA2 to 110 °C	35	35	35
F19	EVI EXV initial opening – Ambient 2	EA3 to EA1	30	30	30
F20	EVI EXV initial opening – Ambient 3	EA4 to EA2	25	25	25
F21	EVI EXV initial opening – Ambient 4	-40.0 to EA3 °C	15	15	15
F22	EVI EXV initial opening – Valve opening 1	EO2 to 100 %	60	60	60
F23	EVI EXV initial opening – Valve opening 2	EO3 to EO1 %	40	40	40
F24	EVI EXV initial opening – Valve opening 3	EO4 to EO2 %	30	30	30

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
F25	EVI EXV initial opening – Valve opening 4	EO5 to EO3 %	20	20	20
F26	EVI EXV initial opening – Valve opening 5	0 to EO4 %	10	10	10
F27	EVI EXV initial opening with sensor failure	0 to 100 %	40	40	10
F28	Differential between the vapour inlet and the vapour outlet temperature for R404A	0.0 to 25.5 °C	8	8	8
F29	Differential between the vapour inlet and the vapour outlet temperature for R507	0.0 to 25.5 °C	8	8	8
F30	Differential between the vapour inlet and the vapour outlet temperature for R134a	0.0 to 25.5 °C	8	8	8
F31	Differential between the vapour inlet and the vapour outlet temperature for R22	0.0 to 25.5 °C	8	8	8
F32	Differential between the vapour inlet and the vapour outlet temperature for R407C	0.0 to 25.5 °C	13	13	13
F33	Differential between the vapour inlet and the vapour outlet temperature for R407A	0.0 to 25.5 °C	13	13	13
F34	Differential between the vapour inlet and the vapour outlet temperature for R407F	0.0 to 25.5 °C	13	13	13
F35	Differential between the vapour inlet and the vapour outlet temperature for R448A	0.0 to 25.5 °C	13	13	13
F36	Differential between the vapour inlet and the vapour outlet temperature for R449A	0.0 to 25.5 °C	13	13	13
F37	Differential between the vapour inlet and the vapour outlet temperature for R410A	0.0 to 25.5 °C	8	8	N.V.
F38	Max DLT temperature before changing from vapour to liquid injection control	-40 to 180 °C	133	133	133
F39	Differential before resuming vapour injection	0.0 to 25.5 °C	10	10	10
F40	Max open EXV warning time	0 to 255 min	2	2	2
F41	Delta between setpoint and shortage of refrigerant error during max open warning	0.0 to 25.5 °C	8	8	8
F42	Constant liquid temperature mode enabled for low ambient EVI injection	No (0-NO) - Yes (1-YES)	NO	NO	NO
F43	Constant liquid temperature setpoint	-40 to 110 °C	0	0	0
F44	Constant liquid temperature enable temperature	-40 to 110 °C	-20	-20	-20

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
G01	Case temperature probe selection	Not used (0-NU) Mid-coil temperature (1-MCT) Discharge line temperature (2-DLT) Ambient temperature (3-AMT) Thermostat temperature (4-TMT) Evaporator temperature (5-EPT) Vapour inlet temperature (6-UIT) Vapour outlet temperature (7-UOT) Liquid temperature (8-LLT) Suction line temperature (9-SLT) Coil temperature (10-COT)	**NU**	**NU**	**NU**
G02	Case temperature setpoint	CLS to CUS	**2**	**2**	**2**
G03	Case temperature differential	0.1 to 25.5 °C	**1**	**1**	**1**
G04	Case temperature low range	-40 to CUS °C	**-10 °C**	**-10 °C**	**-10 °C**
G05	Case temperature high range	CLS to 110 °C	**15 °C**	**15 °C**	**15 °C**
G06	Case probe failure limp-along on time	0 to 255 min	**2 min**	**2 min**	**2 min**
G07	Case probe failure limp-along off time	0 to 255 min	**1 min**	**1 min**	**1 min**
G08	Compressor and fan status when open door >> no = normal operation; Fn = Fans off; cP = Compressor off; Fc = Compr. & fans off	no (0-NO) Fn (1-FAN) cP (2-CPR) Fc (3-F-C)	**NO**	**NO**	**NO**
G09	Regulation with open door	No (0-NO) - Yes (1-YES)	**YES**	**YES**	**YES**
G10	Liquid/vapour injection switch based on SH activation	No (0-NO) - Yes (1-YES)	**YES**	**YES**	**YES**
G11	Maximum pumpdown time	0 to 255 min	**3 min**	**3 min**	**3 min**
G12	Defrost probe selection	Not used (0-NU) Mid-coil temperature (1-MCT) Discharge Line temperature (2-DLT) Ambient temperature (3-AMT) Thermostat temperature (4-TMT) Evaporator temperature (5-EPT) Vapour inlet temperature (6-UIT) Vapour outlet temperature (7-UOT) Liquid temperature (8-LLT) Suction line temperature (9-SLT) Coil temperature (10-COT)	**NU**	**NU**	**NU**
G13	Defrost in probe selection		**NU**	**NU**	**NU**
G14	Defrost out probe selection		**NU**	**NU**	**NU**
G15	Threshold percentage to enable intelligent defrost	0 to 100 %	**4 %**	**4 %**	**4 %**
G16	Duration to calculate the average difference between the diP and doP	0 to 100 min	**5 min**	**5 min**	**5 min**

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
G17	Defrost type	EL (0-EL) in (1-IN) Pulse (2-PLS)	EL	EL	EL
G18	Interval between defrost cycles	0 to 120 h	4 h	4 h	4 h
G19	Maximum length for defrost	0 to 255 min	20 min	20 min	20 min
G20	Duration of pulse defrost	0 to G19	15	15	15
G21	Defrost termination temperature	-40 to 110 °C	10 °C	0 °C	0 °C
G22	Defrost delay time	0 to 255 min	0 min	0 min	0 min
G23	Defrost interval mode	nu (0-NU) in (1-IN) rtC (2-rtC) Intelligent (3-INT)	NU	NU	NU

G24	Display during defrost
	dEF = Defrost;
	Set = Setpoint case temp;
	it = Case temp;
	rt = Display in standard operation
		dEF (0-DEF)
		Set (1-SET)
		it (2-IT)
		rt (3-RT)
			DEF	DEF	DEF

G25	Maximum display delay after defrost	0 to 255 min	0 min	0 min	0 min
G26	Drip time	0 to 120 min	1 min	1 min	1 min
G27	Defrost at power-on	No (0-NO) - Yes (1-YES)	NO	NO	NO
G28	Workday defrost start 1	00:00 – 23:50; nu	0:00	0:00	0:00
G29	Workday defrost start 2	00:00 – 23:50; nu	4:00	4:00	4:00
G30	Workday defrost start 3	00:00 – 23:50; nu	8:00	8:00	8:00
G31	Workday defrost start 4	00:00 – 23:50; nu	12:00	12:00	12:00
G32	Workday defrost start 5	00:00 – 23:50; nu	16:00	16:00	16:00
G33	Workday defrost start 6	00:00 – 23:50; nu	20:00	20:00	20:00
G34	Holiday defrost start 1	00:00 – 23:50; nu	0:00	0:00	0:00
G35	Holiday defrost start 2	00:00 – 23:50; nu	4:00	4:00	4:00
G36	Holiday defrost start 3	00:00 – 23:50; nu	8:00	8:00	8:00
G37	Holiday defrost start 4	00:00 – 23:50; nu	12:00	12:00	12:00
G38	Holiday defrost start 5	00:00 – 23:50; nu	16:00	16:00	16:00
G39	Holiday defrost start 6	00:00 – 23:50; nu	20:00	20:00	20:00

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
G40	First weekly holiday	SUN (0-SUN) MON (1-MON) TUE (2-TUE) WED (3-WED) THU (4-THU) FRI (5-FRI) SAT (6-SAT) nu (7-NU)	**SAT**	**SAT**	**SAT**
G41	Second weekly holiday		**SUN**	**SUN**	**SUN**

G42	Fans operating mode
	cn = Parallel to compressor, off during defrost;
	on = Fans always on, only off during defrost;
	cy = Parallel to compressor, on during defrost;
	oy = Fans permanently in operation
		cn (0-CN)
		on (1-ON)
		cy (2-CY)
		oy (3-OY)
			CN	**CN**	**CN**

G43	Fans stop temperature	-40 to 110 °C	**0 °C**	**0 °C**	**0 °C**
G44	Temperature differential avoiding short cycles of fans	0 to 59 °C	**2 °C**	**2 °C**	**2 °C**
G45	Fan On time	0 to 255 min	**1 min**	**1 min**	**1 min**
G46	Fan Off time	0 to 255 min	**1 min**	**1 min**	**1 min**
G47	Room probe selection for evaporator fan management	Not used (0-NU) Mid-coil temperature (1-MCT) Discharge line temperature (2-DLT) Ambient temperature (3-AMT) Thermostat temperature (4-TMT)	**NU**	**NU**	**NU**
G48	Maximum case temperature alarm threshold	G49 to 110 °C	**10 °C**	**10 °C**	**10 °C**
G49	Minimum case temperature alarm threshold	-40 to G48 °C	**-25 °C**	**-25 °C**	**-25 °C**
G50	Case temperature alarm restart differential	0.1 to 25.5 °C	**3 °C**	**3 °C**	**3 °C**
G51	Case temperature alarm delay	0 to 255 sec	**60 sec**	**60 sec**	**60 sec**
G52	Exclusion of temperature alarm at start-up	0 to 255 min	**20 min**	**20 min**	**20 min**
G53	Maximum door open time before alarm	0 to 255 min	**3 min**	**3 min**	**3 min**
G54	Maximum length for light when door switch is closed	0 to 255 min	**1 min**	**1 min**	**1 min**
G55	Fan delay after defrost	0 to 255 min	**1 min**	**1 min**	**1 min**
G56	Use the liquid line solenoid	no; yes	**NO**	**NO**	**NO**
H01	Current sensing 1	no; yes	**YES**	**YES**	**YES**
H02	Current sensing 2	no; yes	**YES**	**YES**	**YES**
H03	Voltage sensing 1	no; yes	**NO**	**NO**	**NO**

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
H04	Voltage sensing 2	no; yes	NO	NO	NO
H05	Voltage sensing 3	no; yes	NO	NO	NO
H06	Voltage and current protection enabled	no; yes	YES	YES	YES
H07	Maximum continuous current limit	3PE = 0: 0.0 to 70.0 A 3PE = 1: 0.0 to 35.0 A	Unit dependent	Unit dependent	Unit dependent
H08	Voltage/current sensing trip minimum off time	0 to 255 min	5 min	5 min	5 min
H09	Adjustable current limit before trip	0.0 to MCC Ampere	Unit dependent	Unit dependent	Unit dependent
H10	Ignore current sensing duration at start-up duration	0 to 255 sec	3 sec	3 sec	3 sec
H11	Number of overcurrent trips before lockout	0 to 15	5	5	5
H12	Number of loss-of-phase trips before lockout	0 to 15	5	5	5
H13	Minimum voltage to trip compressor	0 to 400 V	360 V	360 V	360 V
H14	Maximum voltage to trip compressor	0 to 800 V	480 V	480 V	480 V
H15	Over or under voltage minimum time	0 to 255 sec	60 sec	60 sec	60 sec
H16	Compressor minimum off time because of voltage error	0 to 255 min	3 min	3 min	3 min
H17	Number of compressor trips before lockout because of voltage	0 to 15	5	5	5
H18	Adjustable under average voltage percentage	0 to 100 %	90 %	90 %	90 %
H19	Generate warning or shut down compressor when phase imbalance	0: Generate warning (0-ARN) 1: Unit off (1-Off)	Off	Off	Off
H20	Missing current duration before warning	0 to 255 sec	10 sec	10 sec	10 sec
H21	Minimum high side superheat	-40 to 110 °C	10 °C	10 °C	10 °C
H22	Maximum amount of time allowed in an interval to check for floodback	0 to H23 min	30 min	30 min	30 min
H23	Interval to check for floodback	H22 to 120 min	45 min	45 min	45 min
H24	Duration of checking anti-floodback alarm reset condition	1 to 255 min	20 min	20 min	20 min
H25	Three-phase enable	no; yes	YES	YES	YES
H26	Upper limit value of imbalance current	0 to 70 A	7 A	7 A	7 A
I01	Ambient temperature threshold to turn off crankcase heater	-40 to 180 °C	10 °C	10 °C	10 °C
I02	Compressor minimum off time before turning the crankcase heater on	0 to 255 min	5 min	5 min	5 min

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
L01	Steps for initial regulation	SH2 to SH1 steps	**15**	**15**	**15**
L02	Superheating setpoint	0.0 to 25.5 °C	**5**	**5**	**5**
L03	Threshold of low superheating	0.0 to SH18 °C	**1**	**1**	**1**
L04	Threshold of high superheating	SH17 to 80.0 °C	**15**	**15**	**15**
L05	Extra % of valve close in case of low superheating	0 to 100 %	**0**	**0**	**0**
L06	Delay high superheating	0 to 255 sec	**30**	**30**	**30**
L07	Delay low superheating	0 to 255 sec	**30**	**30**	**30**
L08	Threshold of MOP	SH23 to 60.0 °C	**35**	**35**	**35**
L09	Threshold of LOP	-50 to SH22 °C	**-20**	**-20**	**-20**
L10	Activation delay MOP	0 to 255 sec	**1**	**1**	**1**
L11	Activation delay LOP	0 to 255 sec	**1**	**1**	**1**
L12	Steps close/open in case of MOP/LOP	0 to SH1 steps	**20**	**20**	**20**
M01	Max step valve	SH2 to 800 steps	**150**	**250**	**150**
M02	Min step valve	0 to SH1 steps	**0**	**0**	**0**
M03	Extra steps of valve close	0 to 100 steps	**20**	**20**	**20**
M04	Relax steps	0 to 100 steps	**0**	**0**	**0**
M05	Step rate	10 to 100 steps	**35**	**35**	**35**
M06	Regulation of the valve 0: automatic, 1: manual	Automatic (0-AUT) Manual (1-MAN)	**AUT**	**AUT**	**AUT**
M07	Steps if manual regulation	SH2 to SH1 steps	**15**	**15**	**15**
M08	Proportional band (if 0 the regulation is auto adaptive)	0 to 50 °C	**0 °C**	**0 °C**	**0 °C**
M09	Integral time	0 to 255 sec	**0**	**0**	**40**
M10	Derivative	0 to 255 sec	**0 sec**	**0 sec**	**0 sec**
M11	Dead band	0 to 10 °C	**2**	**1**	**2**
M12	Min % of the valve	0 to SH15 %	**0**	**1**	**0**
M13	Max % of the valve	SH14 to 100 %	**100 %**	**100 %**	**100 %**
M14	Filter on the pressure	1 to 255 sec	**1 sec**	**1 sec**	**1 sec**
M15	Interval of updating valve	1 to 255 sec	**20 sec**	**20 sec**	**20 sec**
M16	Filter on the temperature [1-100] sec	1 to 255 sec	**1 sec**	**1 sec**	**1 sec**
M17	Activation delay probe error	0 to 255 sec	**1 sec**	**1 sec**	**1 sec**

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
M18	% valve in case of probe error	0 to 100 %	**50**	**10**	**10**
M19	Time at initial steps at the start time	0 to 255 sec	**30 sec**	**30 sec**	**30 sec**
N01	Current minute	0 to 59			
N02	Current hour	0 to 23			
N03	Day of month	1 to 31			
N04	Month	1 to 12			
N05	Year	0 to 99			
P01	Compressor setpoint hysteresis in energy saving mode	0.0 to 9.9 bar; 0.0 to 99.9 PSI; 0.0 to 25.5 °C	**0**	**0**	**0**
P02	Condenser setpoint hysteresis in energy saving mode	0.0 to 25.5 °C	**0**	**0**	**0**
R01	Digital input 1 function	Not used (0-NU) Suction pressure switch (1-SUS) Thermostat input (2-DEF) High-pressure input (3-HP) Low-pressure input (4-LP) Door switch (5-DOR) Energy saving enable (6-ES) On/Off (7-ONF)	**NU**	**NU**	**NU**
R02	Digital input 1 polarity	oP (0) - CL (1)	**CL**	**CL**	**CL**
R03	Activation delay for digital input 1	0 to 255 min	**0 min**	**0 min**	**0 min**
R04	Digital input 2 function	Not used (0-NU) Suction pressure switch (1-SUS) Thermostat input (2-DEF) High-pressure input (3-HP) Low-pressure input (4-LP) Door switch (5-DOR) Energy saving enable (6-ES) On/Off (7-ONF)	**HP**	**HP**	**HP**
R05	Digital input 2 polarity	oP (0) - CL (1)	**oP**	**oP**	**oP**
R06	Activation delay for digital input 2	0 to 255 min	**0 min**	**0 min**	**0 min**

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
R07	Digital input 3 function	Not used (0-NU) Suction pressure switch (1-SUS) Thermostat input (2-DEF) High-pressure input (3-HP) Low-pressure input (4-LP) Door switch (5-DOR) Energy saving enable (6-ES) On/Off (7-ONF)	**NU**	**NU**	**NU**
R08	Digital input 3 polarity	oP (0) - CL (1)	**CL**	**CL**	**CL**
R09	Activation delay for digital input 3	0 to 255 min	**0 min**	**0 min**	**0 min**
S01	Alarm contact activation in a warning, alarm, lockout	Warning (0-ARN) - Alarm (1-ALM) Lockout (2-LOC)	**ALM**	**ALM**	**ALM**
S02	Alarm relay deactivation	No (0-NO) - Yes (1-YES)	**YES**	**YES**	**YES**
S03	Buzzer enabled	No (0-NO) - Yes (1-YES)	**NO**	**NO**	**NO**
S04	Relay output 1 configuration	Not used (0-NU) Digital compressor (1-DGS) On-Off compressor (2-CPR) Condenser fan 1 (3-CF1) Condenser fan 2 (4-CF2) Evaporator fan (5-EPF) Defrost (6-DEF) Liquid line solenoid (7-LLS) Crankcase heater (8-HTR) Alarm (9-ALM) Light (10-LIG)	**HTR**	**HTR**	**HTR**
S05	Relay output 2 configuration		**NU**	**NU**	**NU**
S06	Relay output 3 configuration		**DGS**	**CPR**	**CPR**
S07	Relay output 4 configuration		**NU**	**NU**	**NU**
S08	Relay output 5 configuration		**ALM**	**ALM**	**ALM**
S09	Triac output 1 configuration	Not used (0-NU) Digital solenoid (1-DGT) Wave-form chopper for fan speed (2-PCF) PWM fan speed (3-PEF) 0-10 V (4-UEF)	**DGT**	**NU**	**NU**
S10	Triac output 2 configuration	Not used (0-NU) Digital solenoid (1-DGT) Wave-form chopper for fan speed (2-PCF)	**PCF**	**PCF**	**PCF**
S11	EXV Configuration	Not used (0-NU) Liquid injection EXV (1-LIN) EVI EXV (2-UIN) System EXV (3-SHT)	**NU**	**LIN**	**UIN**
S12	Output 1 polarity	oP (0) - CL (1)	**CL**	**CL**	**CL**
S13	Output 2 polarity	oP (0) - CL (1)	**CL**	**CL**	**CL**

Code	Description	Range	Factory settings		
			ZXDE	ZXME	ZXLE
T01	Serial address	1 to 247	**1**	**1**	**1**
T02	Reset key configuration	nP (0-NU) - rSt (1-RST)	**RST**	**RST**	**RST**
T03	Period time of menu exit without pressing any key	10 to 120 sec	**30 sec**	**30 sec**	**30 sec**
T04	Time for showing firmware version at start-up	0 to 60 sec	**3 sec**	**3 sec**	**3 sec**
T05	Time for showing program name at start-up	0 to 60 sec	**3 sec**	**3 sec**	**3 sec**
T06	P1 visualization	0 to 999			
T07	P2 visualization	0 to 999			
T08	P3 visualization	0 to 999			
T09	P4 visualization	0 to 999			
T10	P5 visualization	0 to 999			
T11	P6 visualization	0 to 999			
T12	P7 visualization	0 to 999			
T13	Firmware release: day	1 to 31			
T14	Firmware release: month	1 to 12			
T15	Firmware release: year	0 to 999			
T16	Firmware release code	0 to 999			
T17	EEPROM map identification	0 to 999	**807**	**807**	**807**
T18	Access PR2 level	0 to 999			