

CD25 - TD5S INSTRUCTIONS FOR USE

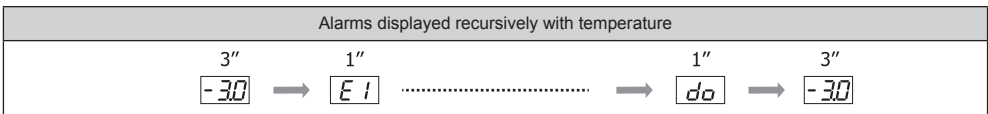
Thank you for having chosen an LAE electronic product. Before installing the instrument, please read this instruction booklet carefully in order to ensure safe installation and optimum performance.

1. INSTALLATION

- The CD25 controller has a size 104x87x40 mm (WxHxD).
- Insert the TD5S through a hole measuring 71x29 mm.
- Make sure that electrical connections comply with the paragraph "wiring diagrams". To reduce the effects of electromagnetic disturbance, keep the sensor and signal cables well separate from the power wires.
- Place the probe T1 inside the room in a point that truly represents the temperature of the stored product.
- If present, place the probe T2 on the evaporator where there is the maximum formation of frost.
- If probe T3 is connected to DI2, its function is determined by the parameter **T3M**. With **T3M**=DSP the probe measures the temperature to be displayed. With **T3M**=CND the probe measures the condenser temperature, it must therefore be placed between the fins of the condensing unit.

2. DISPLAY INFO

	Compressor output	OFF	Controller in stand-by
	Defrost output	DEF	Defrost in progress
	Fan output	DO	Door open alarm
	Heater output	HI	Room high temperature alarm
	Celsius	Lo	Room low temperature alarm
	Fahrenheit	HC	Condenser high temperature
	Second set	RLr	Digital input alarm
	Alarm	CL	Condenser clean warning
		E 1/2/3	Probe T1/2/3 failure



In case of alarm, press any key to mute the buzzer sound.



= Tap = Hold

3. OPERATION

SETTING

Setpoint: display and modification	Standby/Run (SB=YES)	Light ON/OFF
Release key when desired Set is displayed		

Info items	Navigation
E1 Instant T1 temperature E2⁽¹⁾ Instant T2 temperature E3⁽¹⁾ Instant T3 temperature EH Max T1 temperature ELo Min T1 temperature cnd⁽²⁾ Compressor working weeks Loc Keypad state lock Pwd Configuration menu password	
	Keypad Lock
	THI/TLO reset

DEFROST START

Manual	Timed (DFM=TIM)	Optimised (DFM=FRO)	Remote start (DIx =RDS)

SELECTION OF SECOND PARAMETER GROUP (only with C-H=REF)

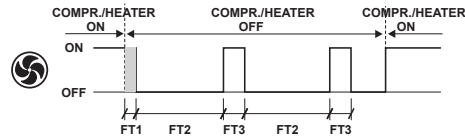
Manual (IISM=MAN)	Remote (IISM=DI2 and DI2=IISM)

4. PARAMETER SETTING

To obtain a customised configuration of the parameters, get access to the SETUP menu from the INFO menu with password 123.

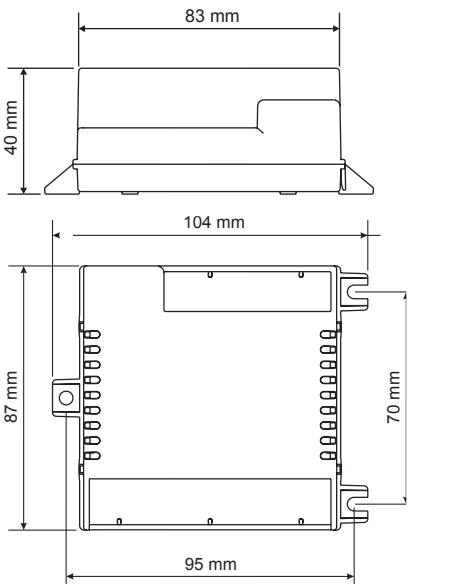
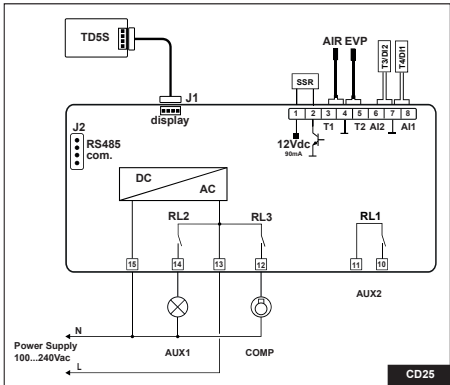
PAR	RANGE	DESCRIPTION
SPL	-50..SPH°C	Minimum limit for SP setting.
SPH	SPL...110°C	Maximum limit for SP setting.
SP	SPL...SPH°C	Setpoint (value to be maintained in the room).
C-H	REF; HEA	Refrigerating (REF) or Heating (HEA) control mode.

HYS	1.0...10.0°	OFF/ON thermostat differential. [only if C-H=REF]
CM	HY; PID	Control mode. [only if C-H=HEA] With CM =HY you select control with hysteresis: parameters HY , TON and TOFF are used. With CM =PID you select a Proportional-Integral-Derivative control mode: parameters PB , IT , DT , AR , CT will be used.
C-H=HEA, CM=HY	HYS 1.0...10.0° TON 0...30min TOF 0...30min	OFF/ON thermostat differential. Minimum on time. After output 1 has been turned on, it remains active for TON minutes regardless of the temperature value measured. Minimum off time. After output 1 has been turned off, it remains inactive for TOF minutes regardless of the temperature value measured.
C-H=HEA, CM=PID	PB 1.0...30.0° IT 0...900sec DT 0...900sec AR 0...100% CT 1...250sec	Proportional bandwidth. Temperature control takes place by changing the ON time of the output: the closer the temperature to the setpoint, the less time of activation. A small proportional band increases the promptness of response of the system to temperature variations, but tends to make it less stable. A purely proportional control stabilises the temperature within the proportional band but does not cancel the deviation from setpoint. With 1PB =0 the output is always off. Integral action time. The steady-state error is cancelled by inserting an integral action. The integral action time, determines the speed with which the steady-state temperature is achieved, but a high speed (IT low) may be the cause of overshoot and instability in the response. With IT =0 the integral control is disabled. Derivative action time. Response overshoot may be reduced by inserting a derivative Action. A high derivative action (DT high) makes the system very sensitive to small temperature variations and causes instability. With DT =0 the derivative control is disabled.
CRT	0...30min	Compressor rest time. [only if C-H=REF] The output is switched on again after CRT minutes have elapsed since the previous switchover. We recommend to set CRT=03 with HYS<2.0°.
CT1	0...30min	Compressor/Heater output run when probe T1 is faulty. With CT1=0 the output will always remain OFF.
CT2	0...30min	Compressor/Heater output stop when probe T1 is faulty. With CT2=0 and CT1>0 the output will always be ON. <i>Example:</i> CT1=4, CT2= 6: In case of probe T1 failure, the compressor/heater will cycle 4 minutes ON and 6 minutes OFF.
CSD	0..30min	Compressor/Heater stop delay after the door has been opened (active only if D1=DOR or DI2=DOR).
DFM	NON; TIM; FRO	Defrost start mode. [only if C-H=REF] NON : defrost function is disabled (<i>the following parameter will be</i> FCM). TIM : regular time defrost. FRO : the defrost time count is only increased when the conditions occur for frost to form on the evaporator (optimised time increase).
C-H=REF, DFM=TIM or DFM=FRO	DFT 0...99 hours DFB NO/YES DLI -50...110° DTO 1...120min DTY OFF; ELE; GAS DPD 0...240sec DRN 0...30min DDM RT; LT; SP; DEF DDY 0...60min FID NO/YES FDD -50...110° FTO 0...120min	Built-in timer value for an automatic defrost to take place. Defrost timer backup. With DFB=YES, after a power interruption, the timer resumes the count from where it was left off with ±30 min. approximation. With DFB=NO, after a power interruption, the defrost timer will re-start to count from zero. Defrost end temperature. Maximum defrost duration. Defrost type OFF : off cycle defrost (Compressor and Heater OFF). ELE : electric defrost (Compressor OFF and Heater ON). GAS : hot gas defrost (Compressor and Heater ON). Evaporator pump down. At the beginning of defrost, defrost outputs (determined by DTY) are OFF for DPD seconds. Pause after defrost (evaporator drain down time). Defrost display mode. During defrost the display will show: RT : the real temperature; LT : the last temperature before defrost; SP : the current setpoint value; DEF : "dEF". Display delay. The display shows the information selected with parameter DDM during defrost and for DDY minutes after defrost termination. Fans active during defrost. Evaporator fan re-start temperature after defrost (referred to T2 probe). Maximum evaporator fan stop after defrost.
FCM	NON; TMP; TIM	Fan mode during thermostatic control. NON : The fans remain ON all the time; TMP : Temperature-based control. The fans are ON when the compressor/heater is ON. When the compressor/heater is turned OFF, the fans remain ON as long as the temperature difference T2-T1 is greater than FDT. The fans are turned ON again with FDH differential. (T1 = Air temperature, T2 = Evaporator temperature); TIM : Timed-based control. The fans are ON when the compressor/heater is ON. When the compressor/heater is OFF, the fans switch ON and OFF according to parameteres FT1, FT2, FT3.
C-H=REF	FDT -12.0...0.0° FDH 1.0 ...12.0°	Evaporator-Air temperature difference for the fans to turn OFF after the compressor has stopped. Temperature differential for fan re-start. <i>Example:</i> FDT = -1.0, FDH=3.0. In this case, after the compressor has stopped, the fans are OFF when T2 > T1 - 1.0 (FDT), whereas the fans are ON when T2 < T1 - 4.0 (FDT-FDH).



FT1	0...180sec	Fan stop delay after compressor stop.
FT2	0 ... 30min	Timed fan stop. With FT2=0 the fans remain on all the time.
FT3	0 ... 30min	Timed fan run. With FT3=0, and FT2 > 0, the fans remain off all the time.
ATM	NON; ABS; REL	Alarm threshold management. NON : all temperature alarms are inhibited (<i>the following parameter will be</i> ADO). ABS : the values programmed in ALA and AHA represent the real alarm thresholds. REL : the values programmed in ALR and AHR are alarm differentials referred to SP and SP+HYS.
ATM=NON		Temperature alarm with relative thresholds, refrigerating control (ATM=REL, C-H=REF).
ATM=ABS		Temperature alarm with relative thresholds, heating control (ATM=REL, C-H=HEA).
ALA	-50 ... 110°C	Low temperature alarm threshold.
AHA	-50 ... 110°C	High temperature alarm threshold.
ALR	-12.0...0.0°	Low temperature alarm differential. With ALR=0 the low temperature alarm is excluded.
AHR	0.0 ...12.0°	High temperature alarm differential. With AHR=0 the high temperature alarm is excluded.
ATI	T1; T2; T3	Probe used for temperature alarm detection.
ATD	0 ... 120min	Delay before alarm temperature warning.
ADO	0 ... 30min	Delay before door open alarm warning.
C-H=REF	AHM NON; ALR; STP; AHT -50...110°C ACC 0 ... 52 weeks IISM NON; MAN; DI2 IISL -50... IISH°C IISH IISL... 110°C IISP IISL..IISH°C IIHY 1.0... 10.0° IIFC NON; TMP; TIM IIDF 0...99 hours	Operation in case of high condenser alarm NON : high condenser alarm inhibited (<i>the following parameter will be</i> ACC). ALR : in case of alarm, "HC" flashes in the display and the buzzer is switched on. STP : in addition to the alarm symbols displayed, the compressor is stopped and defrosts are suspended. Condenser periodic cleaning. When the compressor operation time, expressed in weeks, matches the ACC value programmed, "CL" flashes in the display. With ACC=0 the condenser cleaning warning is disabled and CND disappears from Info Menu. Switchover mode to second parameter set NON : inhibition to use the second parameter group (<i>the following parameter will be</i> SB). MAN : switchover to the two parameter groups through button ✓ DI2 : switchover to the second parameter group when the auxiliary DI2 input makes. Minimum limit for IISP setting. Maximum limit for IISP setting. Setpoint in mode 2. OFF/ON differential in mode 2. Fan control in mode 2. See FCM.
SB	NO/YES	Stand-by button ✕ enabling.
DI1	NON; DOR; ALR; RDS.	DI1 digital input operation NON : digital input 1 not active. DOR : door input. ALR : when contact opens an alarm is generated (if AHM=STP, the compressor is stopped and defrosts are suspended). RDS : when contact makes a defrost is started (remote control).
DI2	NON; DOR; ALR; RDS; IISM; T3	DI2 digital input operation NON : digital input 2 not active. DOR : door input. ALR : when contact opens an alarm is generated (if AHM=STP, the compressor is stopped and defrosts are suspended). RDS : when contact makes a defrost is started (remote control). IISM : when contact makes the second parameter group is active. T3 : probe T3 input.
DI2=T3	T3M DSP; CND. OS3 -12.5...25.0	Auxiliary probe T3 operation DSP : temperature T3 to be displayed. CND : condenser temperature measurement. Probe 3 offset.
DSM	ALR; STP	Door switch input mode. [only if DI1 = DOR and/or DI2 = DOR] ALR : when the door is opened, an alarm will occur after ADO minutes. STP : in addition to an alarm, the compressor/heater is stopped after CSD minutes.
LSM	NON; MAN; D10; D20; D2C	Light control mode. NON : light output not controlled. MAN : light ouput controlled through button ✓. D10 : when DI1 is open, light output is on. D20 : when DI2 is open, light output is on. D2C : when DI2 is closed, light output is on.
OA1	NON; FAN; DEF; LGT; 0-1; ALO; ALC	AUX 1 output operation NON : output disabled (always off). FAN : output enabled for fan control. DEF : output enabled for defrost control. LGT : output enabled for light control. 0-1 : the relay contacts follow the on/standby state of controller. ALO : contacts open when an alarm condition occurs. ALC : contacts make when an alarm condition occurs.
OA2	See OA1	AUX2 output operation. See OA1.
OS1	-12.5...25.0	Probe T1 offset.
T2	NO/YES	Probe T2 enabling (evaporator).
OS2	-12.5...25.0	Probe T2 offset.
TLD	1...30 min	Delay for minimum temperature (TLO) and maximum temperature (THI) logging.
SCL	Readout scale. 1°C : measuring range -50...110°C (0.1°C resolution within -9.9 ÷ 19.9°C interval, 1°C outside) 2°C : measuring range -50...110°C °F : measuring range -58...180°F	
SIM	0...100	Display slowdown.
ADR	1...255	CD25 address for PC communication.
PRT	0; 1	Protocol selection (0=ASCII, 1= RTU)
RFS	NO; YES	Restore to default setup parameters.
BUZ	NON; PAB; PA; PD; DAB; DA	Buzzer options: NON : buzzer never sounds PAB : the power unit buzzer sounds on key touch and on alarms (display buzzer never sounds). PA : the power unit buzzer sounds on alarms only (display buzzer neversounds). PD : the power unit buzzer sounds on alarms only, display buzzer sounds on key touch. DAB : the display buzzer sounds on key touch and on alarms (power unit buzzer never sounds). DA : the display buzzer sounds on alarms only (power unit buzzer never sounds).

5. WIRING DIAGRAMS



TECHNICAL DATA

Power supply	CD25 100...240Vac ±10%, 50/60Hz, 6W
Maximum Loads of Outputs	Compressor Motor Load 16FLA / 96LRA max. @ 240Vac; resistive load 16A @ 240Vac
AUX1	Motor Load 3.6FLA / 21.6LRA max. @ 240Vac; resistive load 15A @ 240Vac
AUX2	Resistive Load 7A @ 240Vac
SSR-driver	90mA @ 12Vdc
Maximum current on common terminal L(13):	23Amp

Input	NTC 10KΩ@25°C LAE Part No. SN4...
Measurement Range	-50 / -9.9 ... 19.9 / 110°C -50...110°C, -58...180°F
Measurement accuracy	±0.1°C within the measurement range

Operating conditions	-10 ... +50°C; 15%...80% r.H.
Purpose:	Operating Control
Construction:	Incorporated Control
Indoor type 1 enclosure	
Type 1B Action	
Impulse voltage:	2500V
Pollution degree 2	

Reference Norms	IEC/EN 60079-15 EN61000-6-1 EN61000-6-3 EN/UL60730-1 EN/UL60730-2-9 RoHS Directive 2015/863/EU REACH Directive 2021/979/EU
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INSTRUCTIONS FOR USE	EN
BEDIENUNGSANLEITUNG	DE
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lae ELECTRONIC	
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CD25 - TD5S SERIE BEDIENUNGSANLEITUNGEN

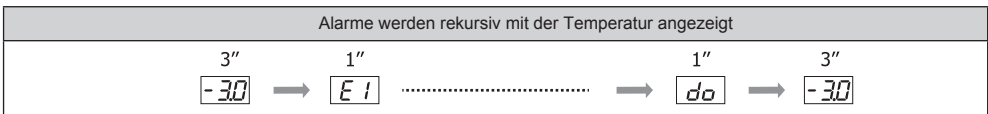
Wir danken Ihnen, dass Sie sich für ein Produkt der Firma LAE electronic entschieden haben. Lesen Sie bitte vor der Installation des Gerätes bitte aufmerksam die vorliegende Bedienungsanleitung durch: Nur so können wir Ihnen höchste Leistungen und Sicherheit garantieren.

1. INSTALLATION

- Der CD25-Regler misst 104x87x40 mm (BxHxT).
- Der Bedienteil TD5S wird durch eine Bohrung von 71x29 mm am Paneel platziert.
- Die Elektroanschlüsse ausführen (siehe hierzu der "Schaltplan"). Zum Vermeidung von elektromagnetischen Störungen, die Fühler und Signalkabel getrennt von Starkstromleitern anbringen.
- Den Fühler T1 so in der Zelle positionieren, dass die Konservierungstemperatur des Produktes gut gemessen werden kann.
- Falls vorhanden, den Fühler T2 auf dem Verdampfer an der Stelle des maximalen Reifensatzes befestigen.
- Falls der Fühler T3 dem Digitaleingang DI2 angeschlossen ist, wird seine Funktion durch den Parameter T3M bestimmt. Mit T3M=DSP misst der Fühler die anzuzeigende Temperatur. Mit T3M=CND misst der Fühler die Verflüssigertemperatur und muss somit zwischen den Rippen des Verflüssigungssatzes positioniert werden.

2. INFO DISPLAY

	Verdichterausgang	oFF	Regler im Standby-Modus
	Abtauausgang	dEF	Abtauung wird ausgeführt
	Lüfterausgang	dO	Alarm für Tür offen
	Heizelementausgang	hI	Hochtemperaturalarm in der Zelle
	Celsius	L o	Niedertemperaturalarm in der Zelle
	Fahrenheit	h c	Hochtemperaturalarm Verflüssiger
	Zweite Parametergruppe	RL r	Alarm im Digitaleingang
	Alarm	cL	Anforderung Verflüssigerreinigung
		E 1/2/3	Fehler Fühler T1/2/3

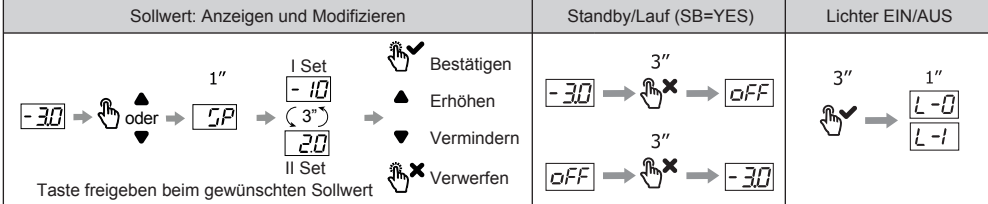


Im Alarmfall, wird der Alarmsummer durch das Tippen einer beliebigen Taste stummgeschaltet.



3. FUNKTION

EINSTELLUNGEN

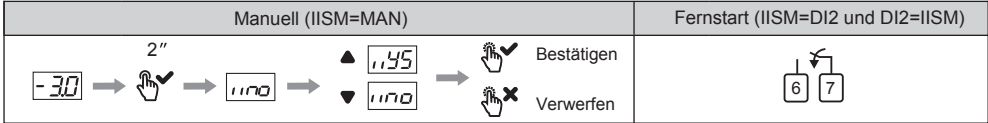


Info	Navigation
$E1$ Ist-Temperatur Fühlers 1 $E2^{(1)}$ Ist-Temperatur Fühlers 2 $E3^{(1)}$ Ist-Temperatur Fühlers 3 Eh_i Max T1-Temperatur elo Min T1-Temperatur $cnd^{(2)}$ Laufwochen Verdichters Loc Tastatursperre Psd Konfiguration Menü Passwort	- Navigation icons: Next, Previous, Exit, Confirm, Reject - Tastatursperre diagram: Loc to YES/NO - Reset von TH/TLO diagram: elo to -10 to Reset/Exit

ABTAUSTART

Manuell	Zeitlich (DFM=TIM)	Optimiert (DFM=FRO)	Fernstart (DIx=RDS)
3" + icons	DFT Stunden	T2 < 0°C für DFT Stunden	DI2=RDS, DI1=RDS

AUSWAHL ZWEITER PARAMETERGRUPPE (nur mit C-H=REF)

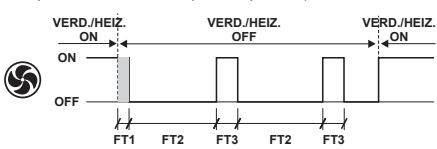


4. KONFIGURATIONSPARAMETER

Um eine personalisierte Konfiguration der Parameter zu erzielen, in die KONFIGURATION mittels Passwortes 123 vom INFO-Menü eintreten.

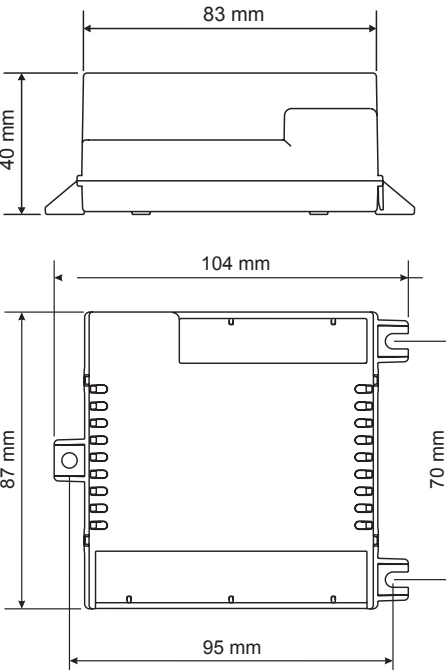
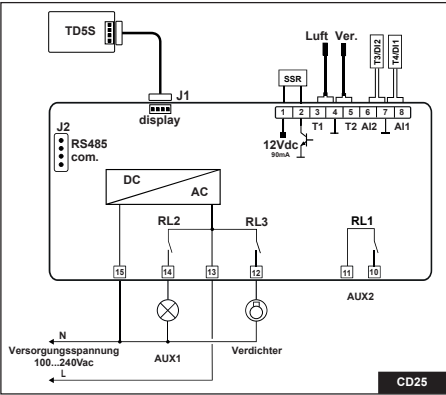
PAR	BEREICH	BESCHREIBUNG
SPL	-50°...SPH	Minimaler Temperatursollwert SP
SPH	SPL...110°	Maximaler Temperatursollwert SP
SP	SPL...SPH	Sollwert (Raumtemperatur zu halten)
C-H	REF-HEA	Regelungsmodus Kühlen (REF) oder Heizen (HEA)

HYS	1.0...10.0°	Thermostatschalthysterese (nur wenn C-H=REF)
CM	HY; PID	Regelungsmodus (nur wenn C-H=HEA) Mit CM=HY erfolgt eine Regelung mit Schalthysterese: die Parameter HY, TON und TOF werden benutzt. Mit CM=PID erfolgt eine Proportional-Integral-Derivativ-Regelung: die Parameter PB, IT, DT, AR, CT werden benutzt.
C-H=HEA, CM=HY	HYS	1.0...10.0°
	TON	0...30Min.
	TOF	0...30Min.
C-H=HEA, CM=PID	PB	1.0...30.0°
	IT	0...900Sek.
	DT	0...900Sek.
C-H=HEA, CM=PID	AR	0...100%
	CT	1...250Sek.
CRT	0...30Min.	Verdichter Auszeit (nur bei C-H=REF). Eine Neuaktivierung des Ausgangs kann nur nach Verstreichen von CRT-Minuten nach dem vorherigen Ausschalten erfolgen.
CT1	0...30Min.	Verdichte/Heizen-Ausgang ON bei T1-Fühlerfehler. Wenn CT1=0, bleibt der Ausgang immer OFF.
CT2	0...30Min.	Verdichter/Heizelement-Ausgang OFF bei T1-Fühlerfehler. Wenn CT2=0 und CT1>0 bleibt der Ausgang immer ON. Beispiel: CT1=4, CT2= 6: Im Fall eines Defektes des Fühlers T1 arbeitet der Verdichter/Heizelement mit 4-minütigen ON-Zyklen und 6-minütigen OFF-Zyklen
CSD	0..30Min.	Abschaltungsverzögerung des Verdichters/Heizelementen nachdem die Tür geöffnet wurde (aktiv nur bei DI1=DOR oder DI2=DOR).
DFM	NON; TIM; FRO	Startmodus eines Abtauzyklus (aktiv nur wenn C-H=REF) NON: Die Abtaufunktion wird deaktiviert (der folgende Parameter wird FCM sein). TIM: Der Timer für die Abtaukontrolle läuft kontinuierlich weiter. FRO: Der Timer läuft nur bei einer Frostakkumulation auf dem Verdampfer weiter (optimierter Timerbetrieb).
C-H=REF, DFM=TIM or DFM=FRO	DFT	0...99Std.
	DFB	NO/YES
	DLI	-50°...110°
C-H=REF, DFM=TIM or DFM=FRO	DTO	1...120Min.
	DTY	OFF; ELE; GAS
	DPD	0...240Sek.
C-H=REF, DFM=TIM or DFM=FRO	DRN	0...30Min.
	DDM	RT; LT; SP; DEF
	DDY	0...60Min.
C-H=REF, DFM=TIM or DFM=FRO	FID	NO/YES
	FDD	-50°...110°
	FTO	0...120Min.
C-H=REF, DFM=TIM or DFM=FRO	FCM	NON; TMP; TIM
	FDT	-12.0...0.0°
	FDH	1.0...12.0°



FT1	0...180Sek.	Lüfterstoppverzögerung nach Verdichterstopp.
FT2	0 ... 30Min.	Zeitlicher Lüfterstopp. Bei FT2=0 bleiben die Lüfter immer eingeschaltet ON.
FT3	0 ... 30Min.	Zeitlicher Lüfterlauf. Bei FT3=0 und FT2 > 0 bleiben die Lüfter immer ausgeschaltet OFF.
ATM	NON; ABS; REL	Alarmschwellenregelung. NON: Alle Temperaturalarme sind gesperrt (der nächste Parameter wird ADO sein). ABS: Die in ALA und AHA programmierten Werte stellen die effektiven Alarmschwellen dar. REL: Die Alarmschwelle erfolgt durch die Summe von Sollwert, Thermostat-Schalthysterese und ALR/AHR.
ALA	-50 ... 110°	Niedertemperaturalarmschwelle.
AHA	-50 ... 110°	Hochtemperaturalarmschwelle.
ALR	-12.0...0.0°	Niedertemperaturalarmdifferential gebunden zum Sollwert. Wenn ALR=0 wird der Niedertemperaturalarm ausgeschlossen.
AHR	0.0 ...12.0°	Hochtemperaturalarmdifferential gebunden zum Sollwert. Bei AHR=0 wird der Hochtemperaturalarm ausgeschlossen.
ATI	T1; T2; T3	Wahl des Bezugsfühlers für Temperaturalarme.
ATD	0 ... 120Min.	Verzögerung vor dem Temperaturalarm.
ADO	0 ... 30Min.	Verzögerung der Alarmmeldung für Tür offen.
C-H=REF	AHM	NON; ALR; STP
	AHT	-50...110°C
	ACC	0 ... 52 Wochen
C-H=REF	IISM	NON; MAN; DI2
	IISL	-50... IISH°C
	IISH	IISL... IISH
C-H=REF	IISP	IISL... IISH
	IIHY	1.0... 10.0°C
	IIFC	NON; TMP; TIM
C-H=REF	IIDF	0...99Std
	SB	NO/YES
	DI1	NON; DOR; ALR; RDS
DI2=T3	DI2	NON; DOR; ALR; RDS; IISM; T3
	DSM	ALR; STP
	LSM	NON; MAN; D10; D20; D2C
DI2=T3	OA1	NON; FAN; DEF; LGT; 0-1; ALO; ALC
	OA2	Siehe OA1
	OS1	-12.5...25.0
DI2=T3	T2	NO/YES
	OS2	-12.5... 25.0
	TLD	1...30Min.
DI2=T3	SCL	1°C; 2°C; °F
	SIM	0...100
	ADR	1...255
DI2=T3	PRT	0; 1
	RFS	NO; YES
	BUZ	NON; PAB; PA; PD; DAB; DA

5. SCHALTPLAN



TECHNISCHE DATEN

Versorgungsspannung CD25 100...240Vac ±10%, 50/60Hz, 6W

Maximale Schaltleistung Ausgänge
Verdichter Motorlast 16FLA / 96LRA max. @ 240Vac;
Ohmsche Last 16A @ 240Vac
AUX1 Motorlast 3,6FLA / 21,6LRA max. @ 240Vac;
Ohmsche Last 15A @ 240Vac
AUX2 Ohmsche Last 7A @ 240Vac
SSR-Treiber 90mA @ 12Vdc
Maximaler Strom an Gemeinsamer L(13): 23Amp

Eingänge
NTC 10KΩ@25°C LAE-Code SN4...

Messbereich
-50 / -9.9 ... 19.9 / 110°C
-50...110°C, -58...180°F

Messgenauigkeit
±0,1°C im Messbereich

Betriebsbedingungen
-10 ... +50°C; 15%...80% r.F.

Zwecks: Betriebskontrolle
Konstruktion: Eingebaute Steuerung
Gehäuse Typ 1 für den Innenbereich
Aktion Typ 1B
Impulsspannung: 2500V
Verschmutzungsgrad 2

Bezugsnormen
IEC/EN 60079-15
EN61000-6-1
EN61000-6-3
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RoHS Directive 2015/863/EU
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