



ELREHA TAR 1170 Temperature Controller with Defrost User Guide

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ELREHA

ELEKTRONISCHE REGELUNGEN GMBH

Operating Instructions

5311073-00/09

Software Vers. r16

Temperature Controller with Defrost

Type: TAR 1170 / 1170 V

TAR 1170/24

TARN 1170

TARN 1170 V(ST)

TAR 3170



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General

This controller is a single circuit ON/ OFF controller for any refrigeration applications.

A2nd , configurable operation mode with a cyclic defrost function makes the TAR (TARN) 1170 suitable for applications like refrigerated counters or similar.

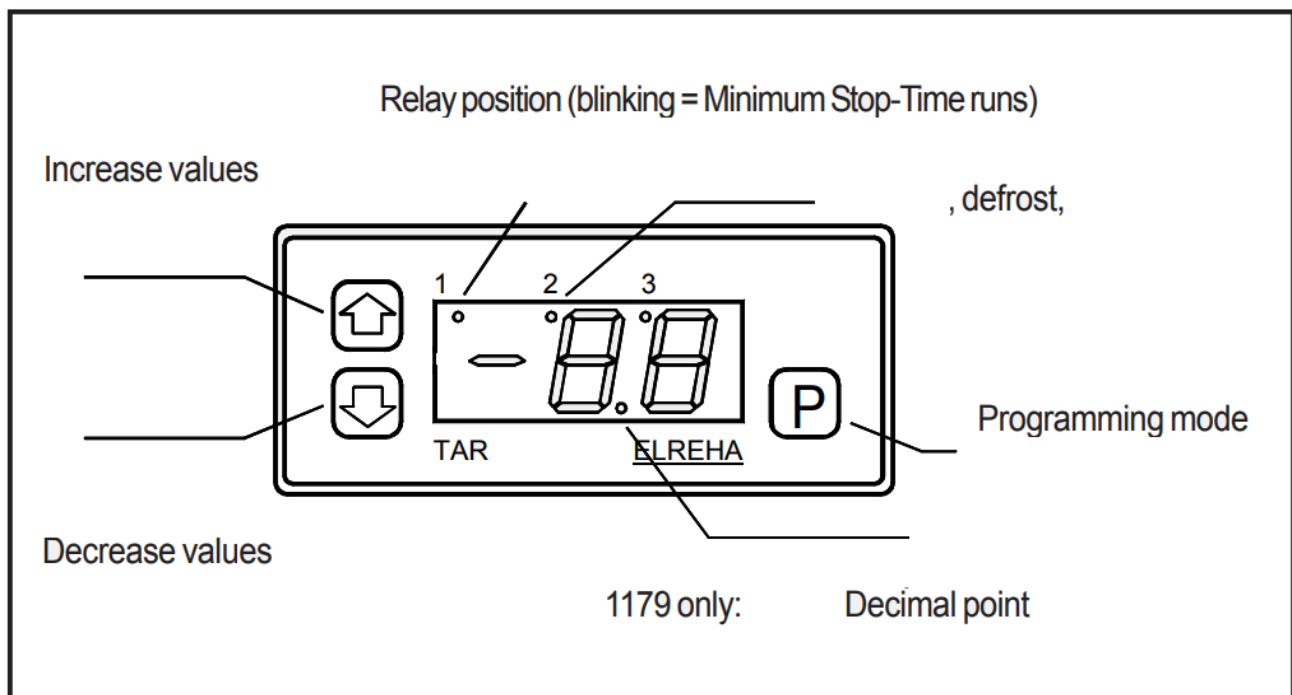
Function

The controller senses the actual temperature with a temperature probe.

The value can be displayed as °C or °F.

This value is compared with control setpoint and according to the difference the output relay switches ON or OFF. A cycle timer starts a defrost event by stopping the refrigeration for a certain time. Further functions you will find in the parameter listing.



Operating Elements



Operating

After power-up, the operation mode appears on the display and after appr. 3 sec. the actual temperature.

Calling up Parameters



- Push „P“, ParameterNo. appears
- Select parameters by „/↓“
- **Push „P“ again,**
Parameter value becomes visible
- Change Parameter value by „/↓“
- Push „P“ again, New value is stored, back to parameter-no.

Access Code

Only the Control setpoint can be set unprotected.

All other parameters are protected by an access code.

The code (see parameter listing P09/ P21) can be entered as follows:


- Push “P”
- Select P09 or P21 (depending on Operating mode) by keys „/↓“
- Push “P” once more
- Select CodeNo. by key “”.
- Push “P” again
Parameter-No. appears again

If you don't press any key for about one minute, the access code is canceled.

Defrost

The first defrost after power-up starts after the time set by P10. If P11 is set to '0' the defrost function is disabled.

Defrost manually ON

Hold key “” for >2,5 sec while the display shows the actual temperature.

Defrost manually OFF Hold key “” for >2,5 sec while the display shows the actual temperature.

(DH) Display Hold

Function to hold the last measured actual temperature value on the display during a defrost cycle. After the defrost cycle has been terminated, the 'Display Hold' ends if :

- measured Actual Value falls short of the Display Value + 2K or
- a fixed 15 minute timer has been run down.

Configuration



The controller can work in two operating modes.

Mode 1: For standard applications, 9 parameters available.

Mode 2: For cold storages, 21 parameters available.

Without configuration (default value) the controller works in mode 1.

How to change the operation mode:

- Switch controller off
- Push and hold „P“
- Switch controller on
- Hold „P“ until „17_“ appears
- Select „171“ for Mode 2 by key „“(>1sec.) or
- Select „170“ for Mode 1 by key „“(>1sec.)

After that the display shows „def“, „- -“ and the selected operating mode. With this, the configuration is finished.



While changing the operating mode all values will be reset to default.

Check of device type and software version

Hold key „P“ for more than 2 sec., then type (170) and software version (r16) will be displayed.

Please read these instructions carefully before applying power. Your attention is drawn to the fact that the warranty is subject to the application of power sources that are within the limits specified in this manual. Repairs or modifications made by anyone other than ELREHA will also void the product warranty. This documentation was compiled with utmost care, however, we cannot guarantee for its correctness in every respect.

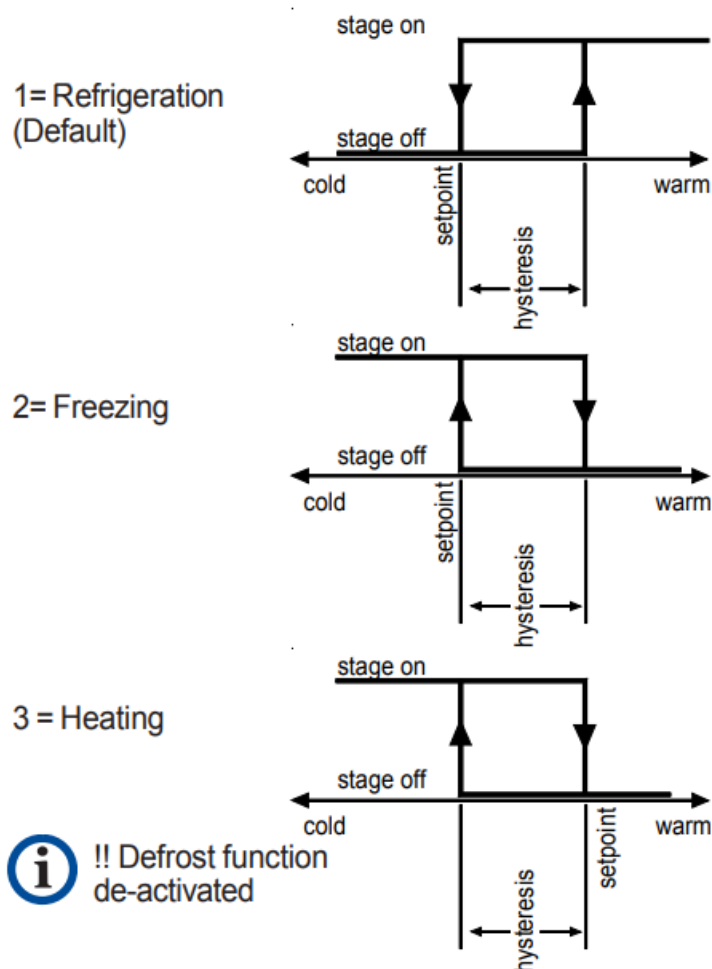
ELREHA Gmbh

D-68766 Hockenheim, Schwetzingen Str. 103

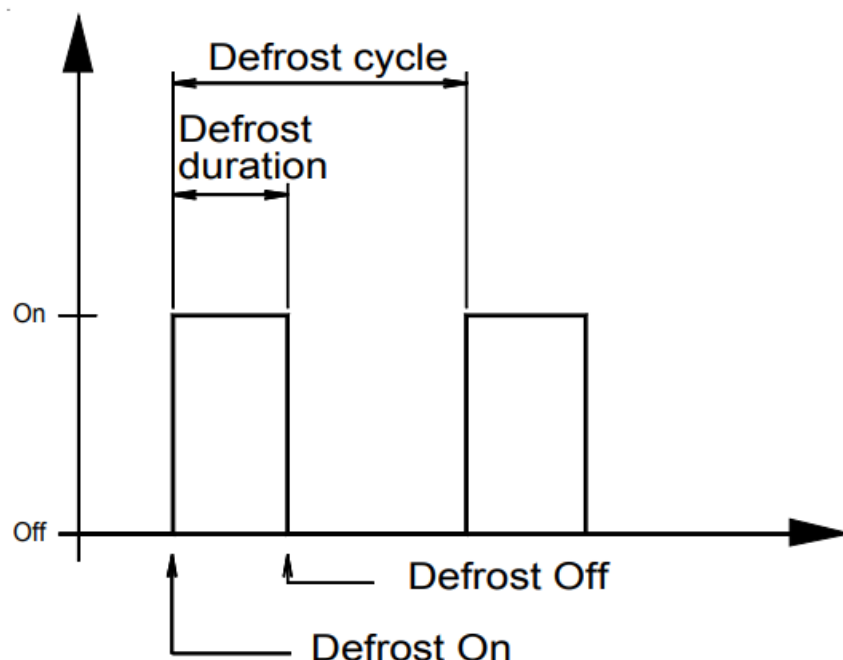
Telefon 0 62 05 / 2009-0 – Fax 0 62 05 / 2009-39 – team@elreha.de

Parameter Explanation

Mode 1	Mode 2	
P01	P01	Actual sensor temperature in °C /°F (display only)
*P02	*P02	Control setpoint, can be changed at any time within the limits set by P04 and P05
P03	P03	Switching differential (hysteresis) of control setpoint def. 2K, range 2...10K / 4...18F (from 0,2 in an 1179)
P04	P04	Highest adjustable Setpoint (default +50°C) range -50...+100°C (-58..212°F)
P05	P05	Lowest adjustable Setpoint (default -50°C), range -50°C/-58°F...P04
P06	P06	Relay action (to set with code 70 only)



P07	P07	Display Mode / Sensor Type (to set with code 70 only) 0= TF201/°C, 1= TF201/°F 2= TF202/°C, 3= TF202/°F (Default = 0)
P08	P08	Sensor Correction (range $\pm 10K$ or $\pm 18F$)
	P09	<p>Defrost Start by</p> <p>1= cyclic air defrost, this means a defrost event will be started after the interval timer P10 has run down. This timer always starts with power-up of the unit.</p> <p>2= Air defrost depending on machine runtime All ON-times of the cooling relay will be added and stored. A defrost starts, if the added ON-times exceed the value set by P10. Then the timer will be reset.</p> <p>3=like 1 + Display Hold Additionally, the Actual value Display P01 will be hold while defrost cycle. Measuring continues with defrost termination.</p> <p>4=like 2 + Display Hold Additionally, the Actual value Display P01 will be hold while defrost cycle. Measuring continues with defrost termination.</p>



—	P10	Defrost Cycle / Machine Runtime range 1...99 hours (default 4 h.)
—	P11	Defrost Duration 0...99 min., 0=no defrost (default 15 min.) After that refrigeration will be restarted.
—	P16	Minimum Idle Time of Refrigeration 0...99 min. (default 0 min.)
—	P17	Info: Remaining time till next defrost
—	P18	Info: Remaining time actual defrost event
—	P20	Info: Remaining time refrigeration stop
P09	*P21	Access Code, Code is – 88 –, for parameter P06/P07 – 70 (!! Older devices need code – 88 – for P06)

The marked " * " parameters can be set without access code.
Default values are set by the manufacturer.

Installation

Precautions !

- Electrical installation and putting into service must be done from authorized personnel.
- Please note the local safety instructions !
- Please note the maximum ratings !

If you have to lengthen the sensor cables, use a shielded type with one end of the shield connected to ground. This minimizes the effect of irregular switching events caused by electromagnetic interference. The sensor leads may be up to hundred meters long. Any wire size from 0.5 sqmm up can be used. After the power has been switched on, the controller will display the actual sensor temperature. After programming the access code, you can set the basic adjustments according to the application.

- Operating Mode (Configuration, see page 1)
- Set relay action with P06 (Attention, Code 70 necessary)
- Set display mode / sensor type with P07.
- If the displayed value of sensor temperature shows any offset from the actual value, you can use parameter "P08" to correct it.
- Preset setpoint range by P04/P05 if necessary.

Now the desired control setpoints can be entered. Informations about running timers you will find at P17-P20.

Failure Display

Display flashing -> value -60 = sensor short

Display flashing -> value 110 = sensor broken

If the controller detects a broken or shorted sensor, (or temp. is not within the Display Range) cooling will be switched off after 1 minute.

Technical Data

Supply Voltage

TAR 1170 (V) 12V AC/DC (12-18VDC)

TAR 1170/24 24V AC/DC

TARN 1170 230VAC / 50-60 Hz

TARN 21170 110VAC / 60 Hz

TAR 3170 230VAC / 50-60 Hz

TAR 23170 110VAC / 60 Hz

Power Consumption max. 2,0 VA

Relay Contact Rating

TAR 1170 8A cos phi=1, 3A ind. / 250V~

TAR 1170/24 8A cos phi=1, 3A ind. / 250V~

TARN 1170 8A cos phi=1, 3A ind. / 250V~

TAR 3170 8A cos phi=1, 3A induktiv / 250V~

TAR 1170V 12A res., 250V~

TARN 1170V 12A res., 250V~

TARN 1170VST 12A res., 250V~

TARN 21170V 12A res., 250V~

Temp. Range working -10...+55°C (14...131°F)

storage -20...+60°C (-4...140°F)

Display Range -60...+110°C (-76...230°F)

Control Range -50...100°C

Resolution 1K (1°F)

Accuracy ± 1K

Display LED red 1/2" (TAR 3170/23170: 10mm)

Relay position indicator 1,2 mm red

Screw terminals 2,5mm²

TARN 1170 VST ... pluggable screw terminals 2,5mm²

Protection class IP 54 from front (TAR 3170: IP 30)

Sensors

Temperature	-20°C	-10°C	0°C	+10°C	+20°C	+25°C	
TF 201	1366	1493	1628	1771	1922	2000	
TF 202	677	740	807	877	951	990	
	Resistance (Ohms)						



EG-Statement of Conformity

We state the following: When operated in accordance with the technical manual, the criteria have been met that are outlined in the guidelines of the council for alignment of statutory orders of the member states on electromagnetic consistency. (89/336/EEG) This declaration is valid for those products covered by the technical manual which itself is part of the declaration. Following standards were consulted for the conformity testing with regard to electromagnetic consistency :IEC 1000-4-1, IEC 1000-4-2, IEC 1000-4-3*, IEC 1000-4-4, IEC 1000-4-5, EN 55011 B, EN 50081, part 1 and 2; EN 50082, part 1 and 2, EN 61000-4-6, EN 61000-4-11

This statement is made from the manufacturer / importer by:

ELREHA Elektronische Regelungen GmbH
68766 Hockenheim

Hockenheim	12.10.2000
(city)	(date)

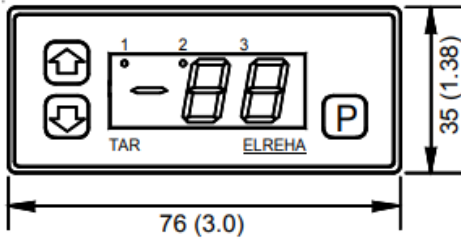
Klaus Birkner, QL / Leiter EMV-Labor

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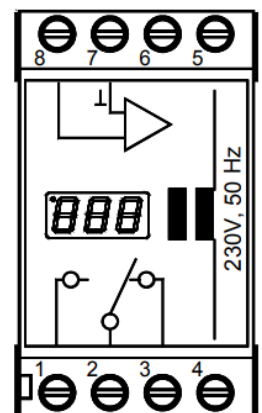
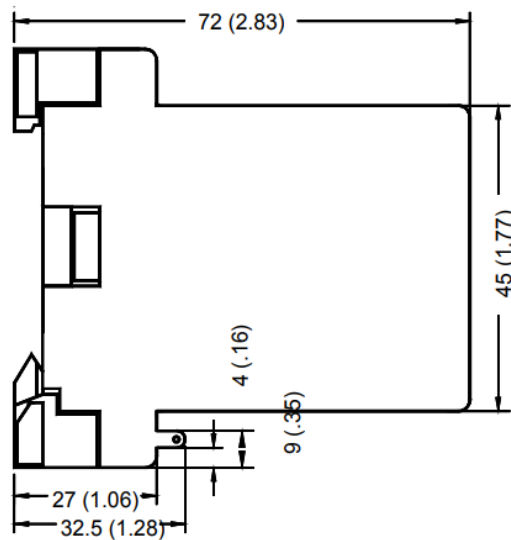
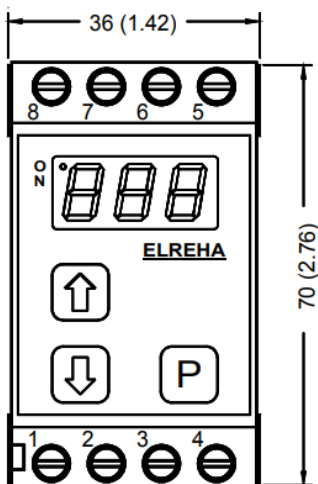
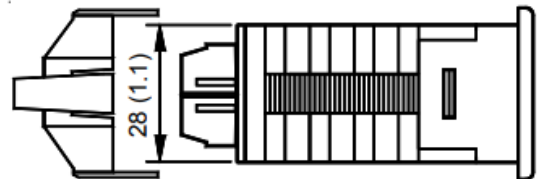
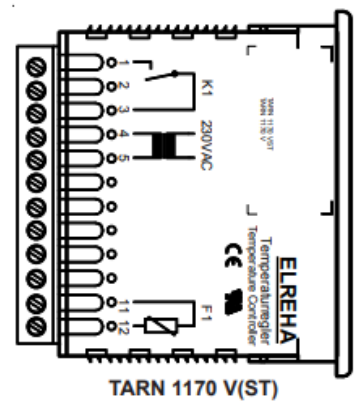
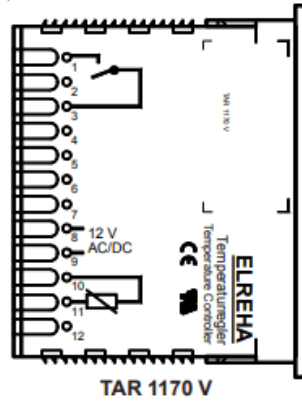
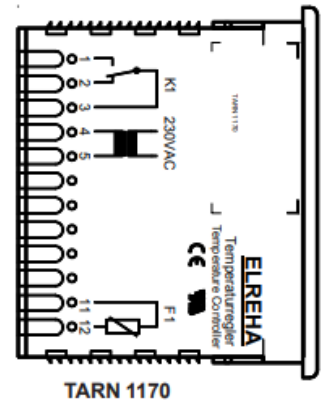
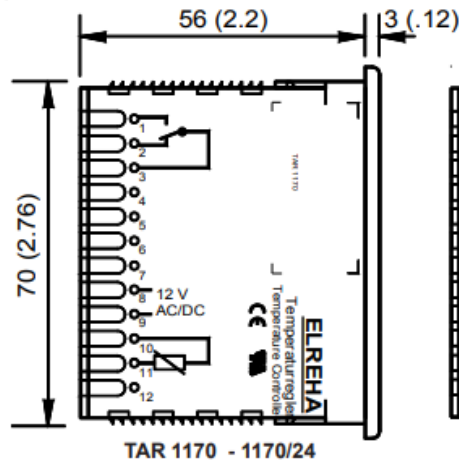
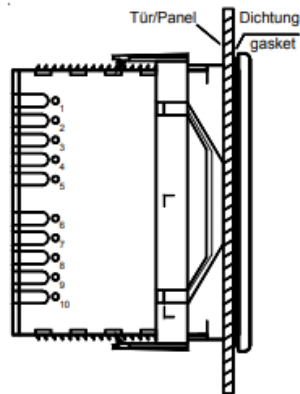
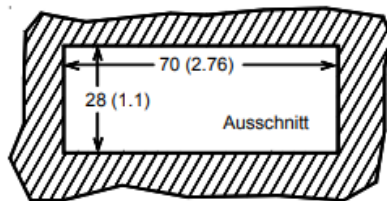
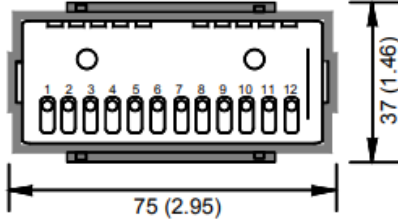
*The conformity with IEC 1000-4-3 is derived from the IEC 1000-4-2 and IEC 1000-4-4 test results. The correlation with IEC 1000-4-3 is based on test results which are located on site at the manufacturer.

Dimensions


Dimensions



Rückansicht mit Befestigungsrahmen
rear view with mounting frame



Documents / Resources

	<p>ELREHA TAR 1170 Temperature Controller with Defrost [pdf] User Guide TAR 1170 Temperature Controller with Defrost, TAR 1170, Temperature Controller with Defrost, Controller with Defrost, Defrost</p>
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References

-  [Manual-Hub.com - Free PDF manuals!](#)
- [User Manual](#)

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