humiSteam x-plus

CAREL

ENG Addendum manual

LEGGI E CONSERVA QUESTE ISTRUZIONI

READ AND SAVE THESE INSTRUCTIONS

Technology & Evolution

WARNINGS

The CAREL humidifiers are advanced products, whose operation is specified in the technical documentation supplied with the product or can be downloaded, even prior to purchase, from the website www.carel.com. Each CAREL product, in relation to its advanced level of technology, requires setup/configuration/programming/commissioning to be able to operate in the best possible way for the specific application. The failure to complete such operations, which are required/indicated in the user manual, may cause the final product to malfunction; CAREL accepts no liability in such cases.
The customer (manufacturer, developer or installer of the final equipment) accepts all liability and risk relating to the configuration of the product in order to reach the expected results in relation to the specific final installation and/or equipment. CAREL may, based on specific agreements, acts as a consultant for the installation/commissioning/use of the unit, however in no case does it accept liability for the correct operation of the humidifier and the final installation if the warnings or suggestions provided in this manual or in other product technical documents are not heeded. In addition to observing the above warnings and suggestions, the following warnings must be heeded for the correct use of the product:

- **DANGER OF ELECTRIC SHOCK**

The humidifier contains live electrical components. Disconnect the mains power supply before accessing inside parts or during maintenance and installation.

- **DANGER OF WATER LEAKS**

The humidifier automatically and constantly fills/drains certain quantities of water. Malfunctions in the connections or in the humidifier may cause leaks.

- **DANGER OF BURNS**

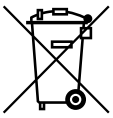
The humidifier contains high temperature components and delivers steam at 100°C/ 212°F.

Important:

- The installation of the product must include an earth/ground connection, using the special yellow-green terminal available in the humidifier.
- The environmental and power supply conditions must conform to the values specified on the product rating labels.
- The product is designed exclusively to humidify rooms either directly or through distribution systems (ducts).
- Only qualified personnel who are aware of the necessary precautions and able to perform the required operations correctly may install, operate or carry out technical service on the product.
- Only water with the characteristics indicated in this manual must be used for steam production.
- All operations on the product must be carried out according to the instructions provided in this manual and on the labels applied to the product. Any uses or modifications that are not authorised by the manufacturer are considered improper. CAREL declines all liability for any such unauthorised use.
- Do not attempt to open the humidifier in ways other than those specified in the manual.
- Observe the standards in force in the place where the humidifier is installed.
- Keep the humidifier out of the reach of children and animals.
- Do not install and use the product near objects that may be damaged when in contact with water (or condensate). CAREL declines all liability for direct or indirect damage following water leaks from the humidifier.
- Do not use corrosive chemicals, solvents or aggressive detergents to clean the inside and outside parts of the humidifier, unless specifically indicated in the user manual.
- Do not drop, hit or shake the humidifier, as the inside parts and the linings may be irreparably damaged.

CAREL adopts a policy of continual development. Consequently, CAREL reserves the right to make changes and improvements to any product described in this document without prior warning. The technical specifications shown in the manual may be changed without prior warning.
The liability of CAREL in relation to its products is specified in the CAREL general contract conditions, available on the website www.carel.com and/or by specific agreements with customers; specifically, to the extent where allowed by applicable legislation, in no case will CAREL, its employees or subsidiaries be liable for any lost earnings or sales, losses of data and information, costs of replacement goods or services, damage to things or people, downtime or any direct, indirect, incidental, actual, punitive, exemplary, special or consequential damage of any kind whatsoever, whether contractual, extra-contractual or due to negligence, or any other liabilities deriving from the installation, use or impossibility to use the product, even if CAREL or its subsidiaries are warned of the possibility of such damage.

DISPOSAL



The humidifier is made up of metal parts and plastic parts. In reference to European Union directive 2002/96/EC issued on 27 January 2003 and the related national legislation, please note that:

1. WEEE cannot be disposed of as municipal waste and such waste must be collected and disposed of separately;
2. the public or private waste collection systems defined by local legislation must be used. In addition, the equipment can be returned to the distributor at the end of its working life when buying new equipment;
3. the equipment may contain hazardous substances: the improper use or incorrect disposal of such may have negative effects on human health and on the environment;
4. the symbol (crossed-out wheeled bin) shown on the product or on the packaging and on the instruction sheet indicates that the equipment has been introduced onto the market after 13 August 2005 and that it must be disposed of separately;
5. in the event of illegal disposal of electrical and electronic waste, the penalties are specified by local waste disposal legislation.

Warranty on the materials: 2 years (from the date of production, excluding consumables).

Approval: the quality and safety of CAREL products are guaranteed by the ISO 9001 certified design and production system, as well as by the CE mark.

4. ELECTRICAL CONNECTIONS

4.2 Power cable connection

Before making the connections, ensure that the machine is disconnected from the mains power supply.

Check that the power supply voltage of the appliance corresponds to the value indicated on the rating plate inside the electrical panel. Insert the power and ground connection cables into the electrical panel compartment using the tear-proof cable gland supplied, or through the cable gland with cable stop, and connect the ends to the terminals (see Fig. 4.c). The humidifier power line must be fitted, by the installer, with a disconnecting switch and fuses protecting against short circuits. Table 13.a lists the recommended cross-sections of the power supply cable and the recommended fuse ratings; note, however, that this data is purely a guide and, in the event of non-compliance with local standards, the latter must prevail.

Note: to avoid unwanted interference, the power cables should be kept apart from the probe signal cables.

Single-phase models Three-phase models

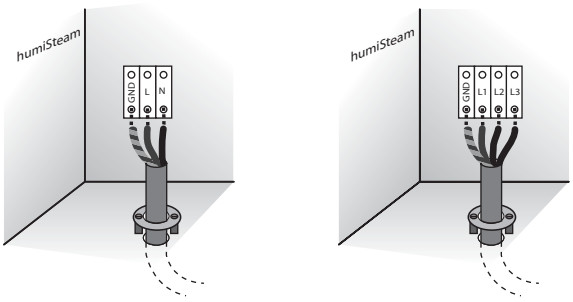


Fig. 4.c (view inside unit, electrical compartment)

11. MAINTENANCE AND SPARE PARTS

Table of water circuit, electrical and electronic spare parts, UE003 to 018

	spare part code							position	fig.
	UE003	UE005	UE008	UE009	UE010	UE015	UE018		
Electrical and electronics									
Power transformer: 460-575/24V	UEKTR30000							9	11.b

Tab. 11.a

(1) To make an order specify the complete product code and the serial number of your humidifer.
(2) z: board version (A: basic version; B: with expansion board)
XXX: kg/h (01...130)
v: voltage
i: 0 single packing; 1: multiple packing

Table of spare part codes, three-phase cylinders UE003 to 018, electrode and gasket kit

Model		UE003	UE005	UE008	UE010	UE015	UE018
STANDARD disposable cylinders	460 VAC 3~, conductivity 350 to 750 µS/cm	BL0T1D00H2	BL0T2D00H2	BL0T2D00H2	BL0T3D00H2	BL0T3D00H2	BL0T3D00H2
	575 VAC 3~, conductivity 350 to 750 µS/cm		BL0T2D00H2	BL0T2D00H2	BL0T3D00H2	BL0T3D00H2	BL0T3D00H2
SPECIAL disposable cylinders	460 VAC 3~, conductivity 75 to 350 µS/cm	BL0T1B00H2	BL0T2C00H2	BL0T2C00H2	BL0T3C00H2	BL0T3C00H2	BL0T3C00H2
	460 VAC 3~, conductivity 750 to 1250 µS/cm	BL0T1D00H2	BL0T2D00H2	BL0T2D00H2	BL0T3D00H2	BL0T3D00H2	BL0T3D00H2
	575 VAC 3~, conductivity 75 to 350 µS/cm		BL0T2C00H2	BL0T2C00H2	BL0T3C00H2	BL0T3C00H2	BL0T3C00H2
	575 VAC 3~, conductivity 750 to 1250 µS/cm		BL0T2D00H2	BL0T2D00H2	BL0T3D00H2	BL0T3D00H2	BL0T3D00H2
SPECIAL openable cylinders	460 VAC 3~, conductivity 75 to 350 µS/cm	BLCT1B00W2	BLCT2C00W2	BLCT2C00W2	BLCT3C00W2	BLCT3C00W2	BLCT3C00W2
	460 VAC 3~, conductivity 350 to 750 µS/cm	BLCT1D00W2	BLCT2D00W2	BLCT2D00W2	BLCT3D00W2	BLCT3D00W2	BLCT3D00W2
	460 VAC 3~, conductivity 750 to 1250 µS/cm	BLCT1D00W2	BLCT2D00W2	BLCT2D00W2	BLCT3D00W2	BLCT3D00W2	BLCT3D00W2
	575 VAC 3~, conductivity 75 to 350 µS/cm		BLCT2C00W2	BLCT2C00W2	BLCT3C00W2	BLCT3C00W2	BLCT3C00W2
	575 VAC 3~, conductivity 350 to 750 µS/cm		BLCT2D00W2	BLCT2D00W2	BLCT3D00W2	BLCT3D00W2	BLCT3D00W2
	575 VAC 3~, conductivity 750 to 1250 µS/cm		BLCT2D00W2	BLCT2D00W2	BLCT3D00W2	BLCT3D00W2	BLCT3D00W2
Electrode and gasket kit	Electrode kit 460 Vac 3~, 75/350 µS/cm	KITBLCT1B2	KITBLCT2C2	KITBLCT2C2	KITBLCT3C2	KITBLCT3C2	KITBLCT3C2
	Electrode kit 460 Vac 3~, 350/750 µS/cm	KITBLCT1D2	KITBLCT2D2	KITBLCT2D2	KITBLCT3D2	KITBLCT3D2	KITBLCT3D2
	Electrode kit 460 Vac 3~, 750/1250 µS/cm	KITBLCT1D2	KITBLCT2D2	KITBLCT2D2	KITBLCT3D2	KITBLCT3D2	KITBLCT3D2
	Filter gasket kit	KITBLC1FG0	KITBLC2FG0	KITBLC2FG0	KITBLC3FG0	KITBLC3FG0	KITBLC3FG0
	575 VAC 3~, conductivity 75 to 350 µS/cm		KITBLCT2C2	KITBLCT2C2	KITBLCT3C2	KITBLCT3C2	KITBLCT3C2
	575 VAC 3~, conductivity 350 to 750 µS/cm		KITBLCT2D2	KITBLCT2D2	KITBLCT3D2	KITBLCT3D2	KITBLCT3D2
	575 VAC 3~, conductivity 750 to 1250 µS/cm		KITBLCT2D2	KITBLCT2D2	KITBLCT3D2	KITBLCT3D2	KITBLCT3D2

Tab. 11.c

Table of water circuit, electrical and electronic spare parts, UE025 to UE065

description	spare part code				position	fig.
	UE025	UE035	UE045	UE065		
Power transformer: 460-24V	UEKTR30000				11	11.d

Tab. 11.d

(1) To make an order specify the complete product code and the serial number of your humidifer.
(2) z: board version (A: basic version; B: with espantion board)
XXX: kg/h (01...130)
v: voltage
i: 0 single packing; 1: multiple packing

Table of spare parts for standard and special cylinders UE025 to UE065

Description		UE025	UE035	UE045	UE065
STANDARD disposable cylinders	460V 3ph cylinder, conductivity 350 to 1250 µS/cm	BL0T4D00H2	BL0T4D00H2	BL0T4D00H2	BL0T5D00H0
	575V 3ph cylinder, conductivity 350 to 1250 µS/cm	BL0T4D00H2	BL0T4D00H2	BL0T4D00H2	BL0T5D00H0
SPECIAL disposable cylinders	460V 3ph cylinder, conductivity 75 to 350 µS/cm	BL0T4D00H2	BL0T4C00H2	BL0T4C00H2	BL0T5C00H0
	575V 3ph cylinder, conductivity 75 to 350 µS/cm	BL0T4D00H2	BL0T4D00H2	BL0T4D00H2	BL0T5C00H0
SPECIAL openable cylinders	460V 3ph cylinder, conductivity 75 to 350 µS/cm	BLCT4D00W2	BLCT4C00W2	BLCT4C00W2	BLCT5C00W0
	460V 3ph cylinder, conductivity 350 to 1250 µS/cm	BLCT4D00W2	BLCT4D00W2	BLCT4D00W2	BLCT5C00W0
	575V 3ph cylinder, conductivity 75 to 350 µS/cm	BLCT4D00W2	BLCT4D00W2	BLCT4D00W2	BLCT5C00W0
	575V 3ph cylinder, conductivity 350 to 1250 µS/cm	BLCT4D00W2	BLCT4D00W2	BLCT4D00W2	BLCT5D00W0
Electrode and gasket kit	460V 3ph cylinder, conductivity 75 to 350 µS/cm	KITBLCT4D2	KITBLCT4C2	KITBLCT4C2	KITBLCT5C0
	460V 3ph cylinder, conductivity 350 to 1250 µS/cm	KITBLCT4D2	KITBLCT4D2	KITBLCT4D2	KITBLCT5D0
	575V 3ph cylinder, conductivity 75 to 350 µS/cm	KITBLCT4D2	KITBLCT4D2	KITBLCT4D2	KITBLCT5C0
	575V 3ph cylinder, conductivity 350 to 1250 µS/cm	KITBLCT4D2	KITBLCT4D2	KITBLCT4D2	KITBLCT5D0
Gasket and filter kit		KITBLC4FG0	KITBLC4FG0	KITBLC4FG0	KITBLC5FG0

Tab. 11.e

Table of spare parts for standard and special cylinders UE090 to UE130

Description		UE090	UE130
STANDARD disposable cylinders	460V 3ph cylinder, conductivity 350 to 1250 µS/cm	BL0T4D00H2	BL0T5D00H0
	575V 3ph cylinder, conductivity 350 to 1250 µS/cm	BL0T4D00H2	BL0T5D00H0
SPECIAL disposable cylinders	460V 3ph cylinder, conductivity 75 to 350 µS/cm	BL0T4C00H2	BL0T5C00H0
	575V 3ph cylinder, conductivity 75 to 350 µS/cm	BL0T4D00H2	BL0T5D00H0
SPECIAL openable cylinder	460V 3ph cylinder, conductivity 75 to 350 µS/cm	BLCT4C00W2	BLCT5C00W0
	460V 3ph cylinder, conductivity 350 to 1250 µS/cm	BLCT4D00W2	BLCT5D00W0
	575V 3ph cylinder, conductivity 75 to 350 µS/cm	BLCT4D00W2	BLCT5D00W0
	575V 3ph cylinder, conductivity 350 to 1250 µS/cm	BLCT4C00W2	BLCT5C00W0
Electrode and gasket kit	460V 3ph cylinder, conductivity 75 to 350 µS/cm	KITBLCT4C2	KITBLCT5C0
	460V 3ph cylinder, conductivity 350 to 1250 µS/cm	KITBLCT4D2	KITBLCT5D0
	575V 3ph cylinder, conductivity 75 to 350 µS/cm	KITBLCT4D2	KITBLCT4D0
	575V 3ph cylinder, conductivity 350 to 1250 µS/cm	KITBLCT4D2	KITBLCT5D0
Gasket and filter kit		KITBLC4FG0	KITBLC5FG0

Tab. 11.g

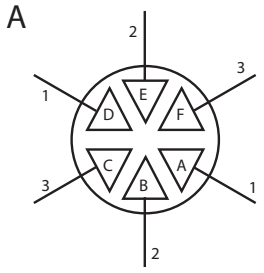
11.6 Cylinder connection

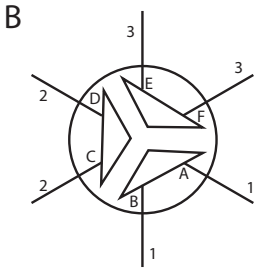
Three-phase models UE025 to UE130

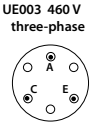
production (kg/h)	conductivity (µS/cm)	power supply (V)
		460 - 575
25	75/350 µS/cm	B
	350/1250 µS/cm	B
35	75/350 µS/cm	B
	350/1250 µS/cm	B
45	75/350 µS/cm	B
	350/1250 µS/cm	B
65	75/350 µS/cm	B
	350/1250 µS/cm	B
90	75/350 µS/cm	B
	350/1250 µS/cm	B
130	75/350 µS/cm	B
	350/1250 µS/cm	B

Tab. 11.h

The cable ends must be tightened with the top nut to 3 Newton • m (27 lbf-in). (units with BL*T5* cylinder only)

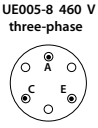






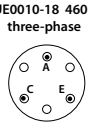
UE003 460 V three-phase

125...1250 µS
1 = A
2 = C
3 = E



UE005-8 460 V three-phase

125...1250 µS
1 = A
2 = C
3 = E



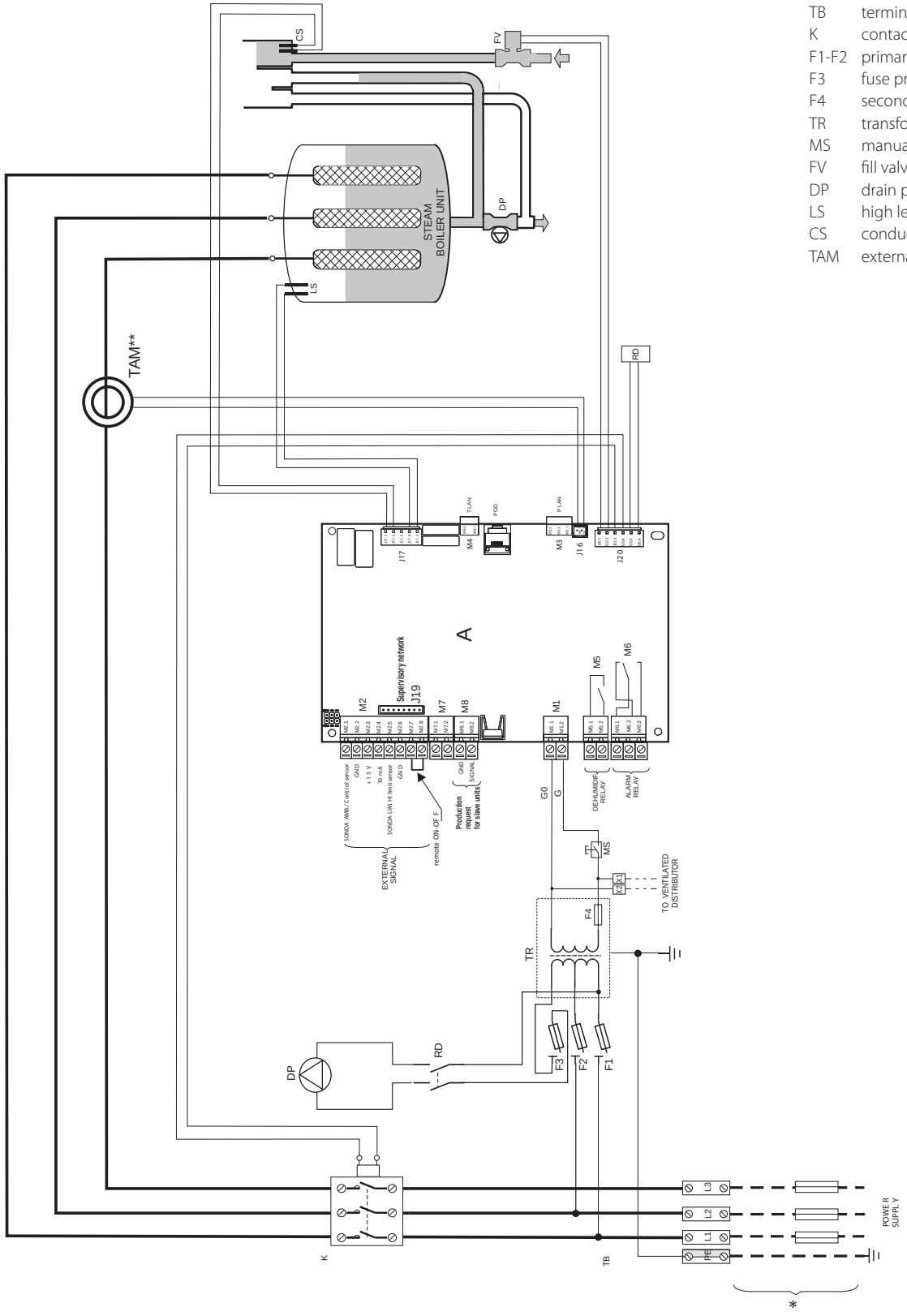
UE0010-18 460 V three-phase

125...1250 µS
1 = A
2 = C
3 = E

Three-phase models UE01 to UE018

12. WIRING DIAGRAMS

12.3 Diagram of three-phase models UE003 to UE018 (460V - 575V)

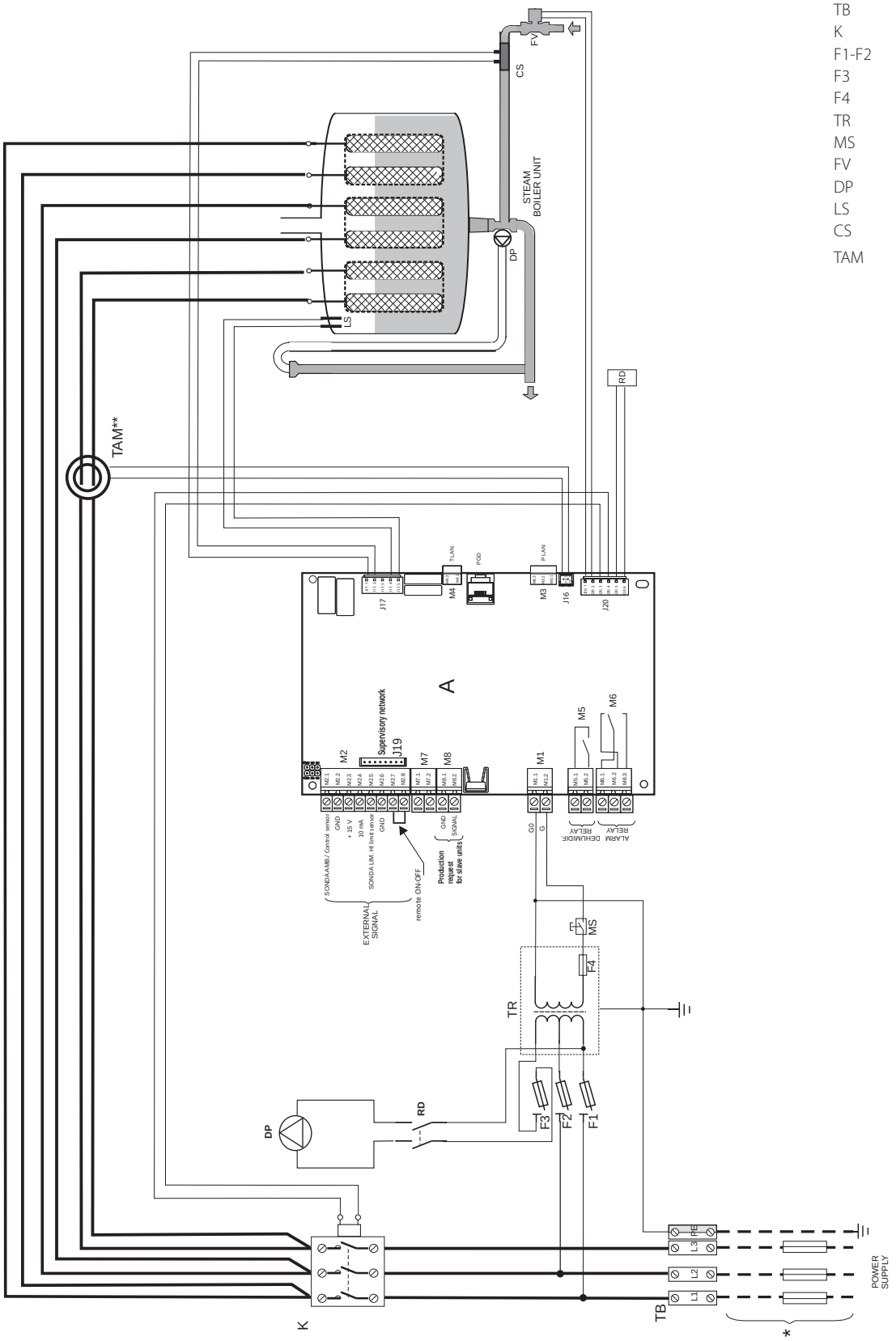


key:

TB	terminal block
K	contactor
F1-F2	primary fuses
F3	fuse protection drain pump
F4	secondary fuse
TR	transformer
MS	manual switch
FV	fill valve
DP	drain pump
LS	high level electrodes
CS	conductivity meter
TAM	external TAM

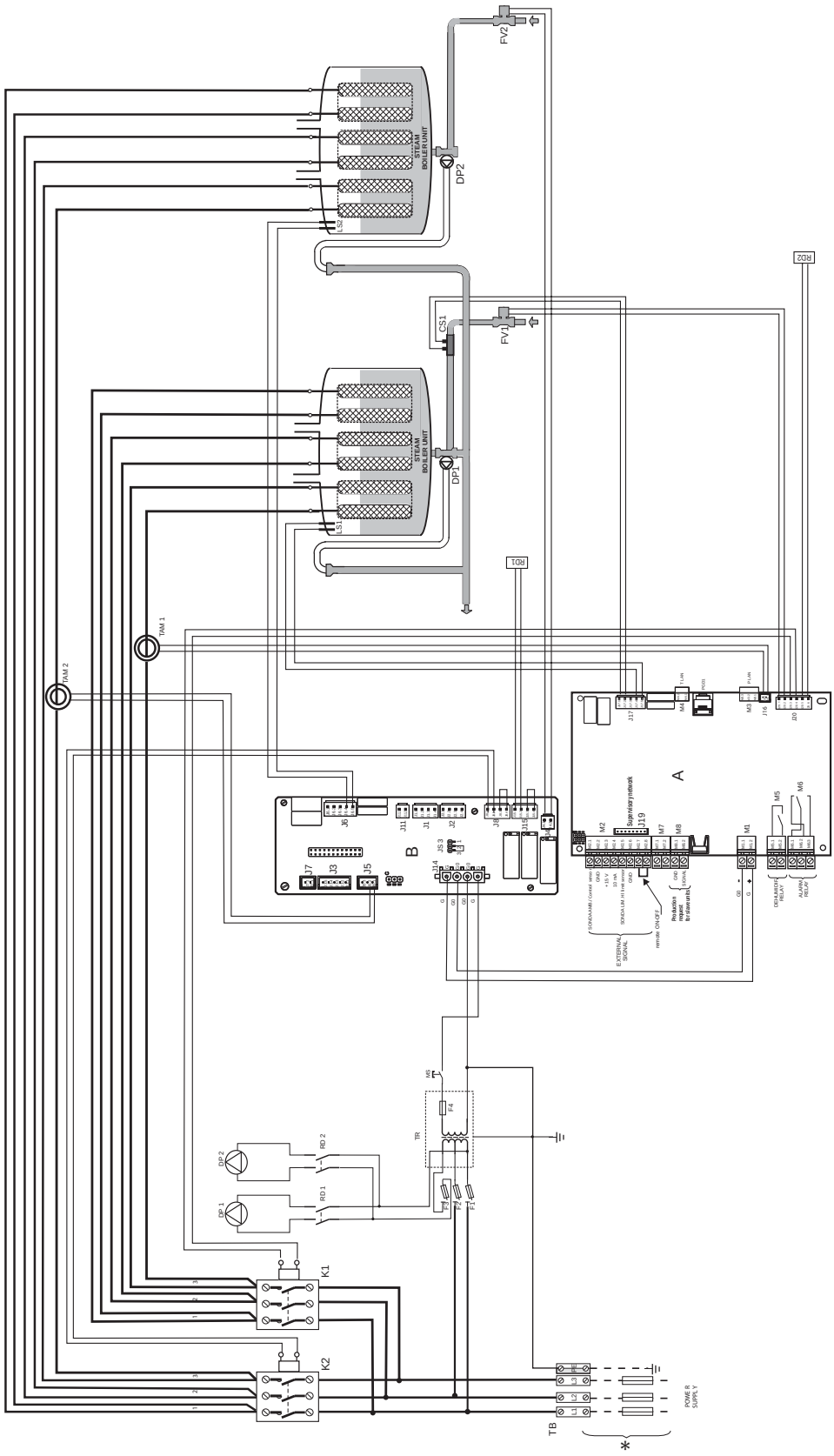
(**) Attention: for TAM configurations and connections see par. 13.1

12.5 Diagram of three-phase models UE025 to UE065 (460V -575V)



(**) Attention: for TAM configurations and connections see par. 13.1

12.6 Diagram of three-phase models UE090 to UE130



key:

TB	terminal block
K	contactor
F1-F2	primary fuses
F3	fuse protection drain pump
F4	secondary fuse
TR	transformer
MS	manual switch
FV 1-2	fill valve
DP 1-2	drain pump
LS 1-2	high level electrodes
CS 1	conductivity meter
TAM 1-2	external TAM

(**) Attention: for TAM configurations and connections see par. 13.1

13. GENERAL FEATURES AND MODELS

13.1 humiSteam models and electrical specifications

model	steam production [2; 4] (kg/h) (lbs/hr)	power[2] (kW)	power supply code	power supply voltages[1] (V - type)	current[2] (A)	nominal specifications TAM configuration[5]		cable[3] (mm²) / (AWG)	recommended External fuses sizes[3] (A / type)	wiring diagram (Fig.)
UE003	3,0 / 6,6	2,2	M	460 - 3~	2,8	13.d	100	1,5 / 16	10 A / fast blow	12.2
UE005	5,0 / 11,0	3,7	M	460 - 3~	4,7	13.a	100	1,5 / 16	10 A / fast blow	12.2
			N	575 - 3~	3,8	13.a	100	1,5 / 16	10 A / fast blow	12.2
UE008	8,0 / 17,6	6,0	M	460 - 3~	7,5	13.a	100	2,5/14	16 A / fast blow	12.2
			N	575 - 3~	7,5	13.a	100	2,5/14	16 A / fast blow	12.2
UE010	10,0 / 22,0	7,5	M	460 - 3~	9,4	13.a	100	2,5/14	16 A / fast blow	12.2
			N	575 - 3~	7.5	13.d	300	2.5/14	16 A / fast blow	12.2
UE015	15,0 / 33,0	11,2	M	460 - 3~	14,1	13.a	300	10/8	20 A / fast blow	12.2
			N	575 - 3~	11.3	13.a	300	4 / 10	16 A / fast blow	12.2
UE018	18 / 39,7	13,5	M	460 - 3~	16,9	13.a	500	6 / 10	32 A / fast blow	12.2
			N	575 - 3~	13.57	13.a	500	6 / 10	32 A / fast blow	12.2
UE025	25 / 55,1	18,7	M	460 - 3~	23,5	13.c	500	10/8	32A / fast blow	12.3
			N	575 - 3~	18.8	13.c	500	6/10	25A / fast blow	12.3
UE035	35 / 77,2	26,2	M	460 - 3~	32,9	13.c	500	16 / 6	50 A / fast blow	12.3
			N	575 - 3~	26.4	13.c	500	10/8	40 A / fast blow	12.3
UE045	45 / 99,2	33,7	M	460 - 3~	42,4	13.c	700	16 / 6	60 A / fast blow	12.3
			N	575 - 3~	33.9	13.c	700	16 / 6	50 A / fast blow	12.3
UE065	65 / 143,3	48,7	M	460 - 3~	61,19	13.b	700	35 / 4	100 A / fast blow	12.4
			N	575 - 3~	48.95	13.b	700	35 / 4	80 A / fast blow	12.4
UE090	90 / 198,4	67,5	M	460 - 3~	84,72	13.c	700	50 / 2	100 A / fast blow	12.5
			N	575 - 3~	67.78	13.c	700	35 / 2	80 A / fast blow	12.5
UE130	130 / 286,6	97,5	M	460 - 3~	122,37	13.b	700	95 / 1/0	160 A / fast blow	12.5
			N	575 - 3~	97.90	13.b	700	70 / 1/0	125 A / fast blow	12.5

Tab. 13.a

(1) tolerance allowed on the rated mains voltage: -15%, +10%;
(2) tolerance on the rated values: +5%, -10% (EN 60335-1);
(3) recommended values refer to laying PVC or rubber cables in closed conduits, 20 m (65.6 feet) long; use the local standards, or whichever is more restrictive,
(4) rated max instant steam production: the average steam production may be affected by external factors, such as: ambient temperature, water quality, steam distribution system;
(5) refer to the wiring diagrams to verify

the data are not absolute and if these differ from local standards, the latter must prevail.

TAM configurations and connections (transformer for measuring the current)

Important: the configurations and connections are already made by CAREL, and no changes are required. The following diagrams represent possible connection modes and may be useful in the event of serious electrical malfunctions on the humidifier.
All operations must only be performed by qualified personnel, improper use may cause serious damage.

one cable turn

Fig. 13.a

one turn of the two cables of the same phase

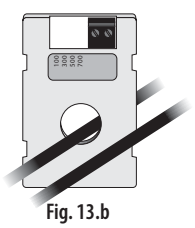


Fig. 13.b

two cable turns of the same phase

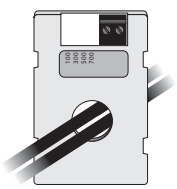


Fig.13.c

one cable in "double turn" mode

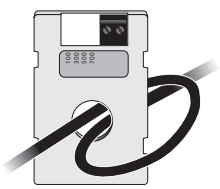


Fig.13.d

three cable turns of the same phase

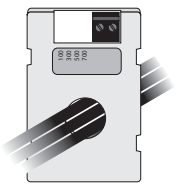


Fig.13.e

Important:

- to avoid interference, separate the power cables from the probe cables.

CAREL

CAREL INDUSTRIES HQs
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