

**DAIKIN**



# INSTALLATION MANUAL

## Packaged water-cooled water chillers



EWWP014KBW1N  
EWWP022KBW1N  
EWWP028KBW1N  
EWWP035KBW1N  
EWWP045KBW1N  
EWWP055KBW1N  
EWWP065KBW1N

**CE - DECLARATION-OF-COMFORMITY**  
**CE - KONFORMITÄTSPRÄKLÄRUNG**  
**CE - DICHIARAZIONE-DE-CONFORMITÀ**  
**CE - ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ**  
**CE - CONFORMITEITSVERKLARING**

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- 02 **CE** erklärt auf seine alleinige Verantwortung das/die Modelle der Klimaanlage für die/diese Erklärung bestimmt ist:
- 03 **CE** déclare sous sa seule responsabilité que les appareils d'air conditionné visés par la présente déclaration:
- 04 **CE** verklaart hierbij op eigen exclusieve verantwoordelijkheid dat de airconditioning units waarop deze verklaring betrekking heeft:
- 05 **CE** declara bajo su única responsabilidad que los modelos de aire acondicionado a los cuales hace referencia la declaración:
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- 07 **CE** declara sua sua exclusiva responsabilidade que os modelos de ar condicionado a que esta declaração se refere:

**EWWP014KBW1N\*\*\*, EWWP022KBW1N\*\*\*, EWWP028KBW1N\*\*\*, EWWP035KBW1N\*\*\*, EWWP045KBW1N\*\*\*, EWWP055KBW1N\*\*\*, EWWP065KBW1N\*\*\*,**  
**\* = , , , , 1, 2, 3, ..., 9, A, B, C, ... Z**

- 01 are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:
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**EN60335-2-40,**

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- 02 gemäß den Vorschriften der:
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- 04 overeenkomstig de bepalingen van:
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- 06 secondo le prescrizioni per:
- 07 με τη/την/των διατάξ(ε)ων των:
- 08 de acordo com o previsto em:
- 09 в соответствии с положениями:
- 10 under the provisions of:
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- 14 za dodržení ustanovení předpisů:
- 15 prema odredbama:
- 16 követi az(é):
- 17 zgodnie z postanowieniami Dyrektywy:
- 18 in urma prevederilor:
- 19 ob upoštevjanju dobob:
- 20 vsakih povelj:
- 21 mednarodni kravatni akt:
- 22 laikantis nuostatų, pakeikiamų:
- 23 nęročij, predstavljenih v predpisih:
- 24 održavajući istanovljenja:
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- 16 **CE** teġes fekkonsseggie ldeklaratjoni kienet, li għall-kliem tas-sistemi ta' kondizzjonar ta' l-awir, li għall-kliem ta' oħroġ.

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**CE - ILMOITUS-YHDENMUKAISUUDESTA**  
**CE - DEKLARACJA-ZGODNOŚCI**  
**CE - PROHLÁSENÍ-O-SHOĎĚ**

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**CE - NEGFELELOŠEG-NYLATKOZAT**  
**CE - DEKLARACJA-ZGODNOŚCI**  
**CE - DECLARAȚIE-DE-CONFORMITATE**

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- 18 **CE** deklarije na verna odgovornost, da modely klimatizatorov, k boroj dolozijo nimejsza deklaracija:
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- 25 **CE** deklarije na verna odgovornost, da modely klimatizatorov, k boroj dolozijo nimejsza deklaracija:

**CE - IZJAVA O SKLADNOSTI**  
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- 16 megjelentek az alábbi szabvány(ok)nak vagy egyéb irányadó dokumentum(ok)nak, ha azokat előírás szerinti használatjuk:
- 17 megfelelnek az alábbi szabvány(ok)nak vagy egyéb irányadó dokumentum(ok)nak, ha azokat előírás szerinti használatjuk:
- 18 sunt în conformitate cu următorul (următoarele) standard(e) sau al(e) document(e) normative, cu condiția ca acestea să fie utilizate în conformitate cu instrucțiunile noastre:
- 19 skladni z naslednjimi standardi in drugimi normativi, pod pogojem, da se uporabijo v skladu z našimi navodili:
- 20 ovat vastavus järgmistele standarditele või teiste normatiivse dokumenteidega, kui need kasutatakse vastavalt meie juhenditele:
- 21 соответствует на средние стандарты или други нормативны документи, при условии, что используются согласно нашим инструкциям:
- 22 atilika žemiau nurodytus standartus (ir arba) kitus norminius dokumentus su sąlyga, kad yra naudojami pagal mūsų nurodymus:
- 23 tad, ja laiboti atbilstošs ražotāja norādījumiem, abtā šajos šķiršos standartiem un citiem normatīviem dokumentiem:
- 24 su v zbiru e s nasledovny(m) normo(m)j) alebo nym(i) normatívm(i) (dokumentom)j), za predpokladu, že sa používajú v súlade s našimi návodmi:
- 25 ürünün, lmalatlarım za göre kullanılması koşullarına eşgüdaki standartlar ve norm belirlen beğletere uyumludur:

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- 11 Direktiv, med foretagne ændringer.
- 12 Direktiver, med betalte ændringer.
- 13 Direktivej, salaisna kuin ne ovat muutteluna.
- 14 v platném znění.
- 15 Snjmeida, kelko je zmieniado.
- 16 irányelvek és módosítások rendelkezéssel.
- 17 pōzriješij normo(m)j) i normatívm(i) (dokumentom)j), za predpokladu, že se používajú v súlade s našimi návodmi:
- 18 Direktivelor, cu amendamentele respective.
- 19 Direktive, med senere ændringer.
- 20 Direktivd koos muudatustega.
- 21 Директиви, с теквие изменения.
- 22 Direktiivose su papildimajms.
- 23 Direktiivās un to papildinājums.
- 24 Snemica, kelko je zmieniado.
- 25 Degstīrīmajš haterleje Joreimeliker.

- 21 **Забелешка** \* както е изложено в <A> и оценено положително от <B> съгласно Сертификата <C>
- 22 **Passaba** \* kaip nusavyta <A> ir kaip įteigiami nuspreta <B> pagal Serifikatą <C>
- 23 **Pezimás** \* kā norādīs <A> un atbilstoš <B> pozitīvajam vērtējumam saskaņā ar serifikātu <C>
- 24 **Poznámká** \* ako bolo uvedené v <A> s pozitívne zistené <B> v súlade s osvedčením <C>
- 25 **Not** \* <A> da beirritigi gbi ve <C> Serifikatsina gōre <B> tarindan olumu olarak degēleendriđigi gbi.

- 19\*\* Daikin Europe N.V. is pooblasten za sestavo datoteke s tehnicno mapo.
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- 23\*\* Daikin Europe N.V. er autorisert å utarbeide tekniske konstruksjonsfiler.
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- 25\*\* Daikin Europe N.V. teknik yapı Dosyasını derlemeje yetkilidir.

DAIKIN



**Jean-Pierre Bauseinck**  
 General Manager  
 Ostend, 1st of July 2010

DAIKIN



**DAIKIN EUROPE N.V.**  
 Zandvoordestraat 300, B-8400 Oostende, Belgium

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Thank you for purchasing this Daikin air conditioner.



READ THIS MANUAL ATTENTIVELY BEFORE STARTING UP THE UNIT. DO NOT THROW IT AWAY. KEEP IT IN YOUR FILES FOR FUTURE REFERENCE.

IMPROPER INSTALLATION OR ATTACHMENT OF EQUIPMENT OR ACCESSORIES COULD RESULT IN ELECTRIC SHOCK, SHORT-CIRCUIT, LEAKS, FIRE OR OTHER DAMAGE TO THE EQUIPMENT. BE SURE ONLY TO USE ACCESSORIES MADE BY DAIKIN WHICH ARE SPECIFICALLY DESIGNED FOR USE WITH THE EQUIPMENT AND HAVE THEM INSTALLED BY A PROFESSIONAL.

IF UNSURE OF INSTALLATION PROCEDURES OR USE, ALWAYS CONTACT YOUR DAIKIN DEALER FOR ADVICE AND INFORMATION.

The English text is the original instruction. Other languages are translations of the original instructions.

**INTRODUCTION**

The Daikin EWWP-KB packaged water-cooled water chillers are designed for indoor installation and used for cooling and/or heating applications. The units are available in 7 standard sizes with nominal cooling capacities ranging from 13 to 65 kW.

The EWWP units can be combined with Daikin fan coil units or air handling units for air conditioning purposes. They can also be used for supplying chilled water for process cooling.

The present installation manual describes the procedures for unpacking, installing and connecting the EWWP units.

**Technical specifications<sup>(1)</sup>**

Model EWWP		014	022	028	035
Dimensions HxWxD	(mm)		600x600x600		
Machine weight	(kg)	113	150	160	167
Connections					
• chilled water inlet and outlet	(inch)	FBSP 1"			
• condenser water inlet and outlet	(inch)	FBSP 1"			
Model EWWP		045	055	065	
Dimensions HxWxD	(mm)		600x600x1200		
Machine weight	(kg)	300	320	334	
Connections					
• chilled water inlet and outlet	(inch)	FBSP 1.5"			
• condenser water inlet and outlet	(inch)	FBSP 1.5"			

**Electrical specifications<sup>(1)</sup>**

Model EWWP		014-065
Power circuit		
• Phase		3N~
• Frequency	(Hz)	50
• Voltage	(V)	400
• Voltage tolerance	(%)	±10

**Options and features<sup>(1)</sup>**

**Options**

- Glycol application for chilled water temperature down to -10°C or -5°C.
- BMS-connection MODBUS (optional kit address card EKAC10C)<sup>(2)</sup>
- Remote user interface (optional kit EKRUMCA). (Necessary to additionally install kit address card EKAC10C.)<sup>(2)</sup>
- Low noise operation kit (field installed)

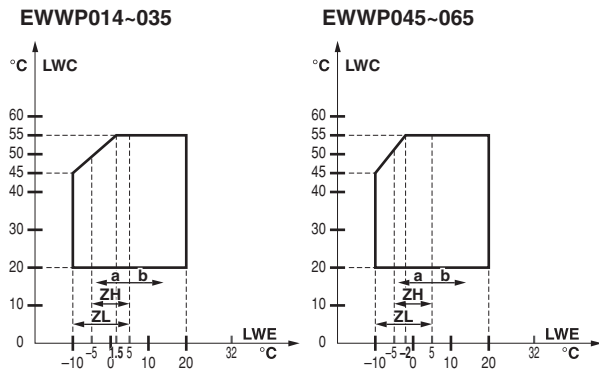
**Features**

- Voltage free contacts
  - general operation
  - alarm
  - operation compressor 1
  - operation compressor 2
- Changeable remote inputs  
 Following functions can be assigned to a total of 2 digital inputs.
  - remote start/stop
  - remote cooling/heating
  - dual setpoint

(1) Refer to the operation manual or engineering data book for the complete list of specifications, options and features.

(2) When EKAC10C is used in combination with remote user controller EKRUMCA then it is not possible to use the BMS-connection MODBUS.

## OPERATION RANGE



LWC	Leaving water temperature condenser
LWE	Leaving water temperature evaporator
a	Glycol
b	Water
	Continuous operation range

## MAIN COMPONENTS (refer to the outlook diagram supplied with the unit)

- 1 Compressor
- 2 Evaporator
- 3 Condenser
- 4 Switchbox
- 5 Chilled water in
- 6 Chilled water out
- 7 Condenser water out
- 8 Condenser water in
- 9 Evaporator entering water temperature sensor
- 10 Freeze up sensor
- 11 Condenser entering water temperature sensor
- 12 Digital display controller
- 13 Power supply intake
- 14 Ball valve (field installed)
- 15 Water filter (field installed)
- 16 Air purge valve (field installed)
- 17 T-joint for air purge (field installed)
- 18 flowswitch (with T-joint) (field installed)
- 19 Main switch

## SELECTION OF LOCATION

The units are designed for indoor installation and should be installed in a location that meets the following requirements:

- 1 The foundation is strong enough to support the weight of the unit and the floor is flat to prevent vibration and noise generation.
- 2 The space around the unit is adequate for servicing.
- 3 There is no danger of fire due to leakage of inflammable gas.
- 4 Select the location of the unit in such a way that the sound generated by the unit does not disturb anyone.
- 5 Ensure that water cannot cause any damage to the location in case it drips out of the unit.

The equipment is not intended for use in a potentially explosive atmosphere.

## INSPECTING AND HANDLING THE UNIT

At delivery, the unit should be checked and any damage should be reported immediately to the carrier claims agent.

## UNPACKING AND PLACING THE UNIT

- 1 Cut the straps and remove the cardboard box from the unit.
- 2 Cut the straps and remove the cardboard boxes with waterpiping from the pallet.
- 3 Remove the four screws fixing the unit to the pallet.
- 4 Level the unit in both directions.
- 5 Use four anchor bolts with M8 thread to fix the unit in concrete (directly or using the floor standing supports).
- 6 Remove the service front plate.

## IMPORTANT INFORMATION REGARDING THE REFRIGERANT USED

This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. Do not vent gases into the atmosphere.

Refrigerant type: R407C  
GWP<sup>(1)</sup> value: 1652.5

<sup>(1)</sup> GWP = global warming potential

The refrigerant quantity is indicated on the unit name plate.

## CHECKING THE WATER CIRCUIT

The units are equipped with water inlets and water outlets for connection to a chilled water circuit and to a hot water circuit. These circuits must be provided by a licensed technician and must comply with all relevant European and national regulations.



The unit is only to be used in a closed water system. Application in an open water circuit can lead to excessive corrosion of the water piping.

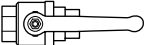



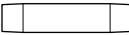
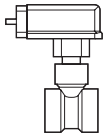
Before continuing the installation of the unit, check the following points:

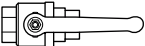



### ■ Additional components not delivered with the unit

- 1 A circulation pump must be provided in such a way that it discharges the water directly into the heat exchanger.
- 2 Drain taps must be provided at all low points of the system to permit complete drainage of the circuit during maintenance or in case of shut down.
- 3 Vibration eliminators in all water piping connected to the chiller are recommended to avoid straining the piping and transmitting vibration and noise.

## Additional water piping delivered with the unit

All additional water piping must be installed on the system according to the piping diagram as mentioned in the operation manual. The flowswitch must be connected as described on the wiring diagram. See also chapter "Before starting" on page 4.

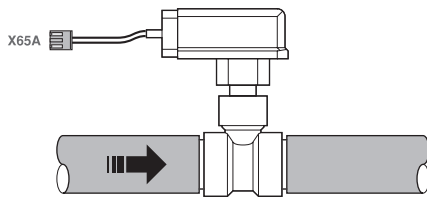
Carton box 1	water piping evaporator
	2x Ball valve
	1x Water filter
	1x Air purge
	1x T-joint for air purge
	2x Flowswitch pipe
	1x Flowswitch + 1x T-joint

Carton box 2	water piping condenser
	2x Ball valve
	1x Water filter
	1x Air purge
	1x T-joint for air purge

- The flowswitch must be installed in the water outlet pipe of the evaporator to prevent the unit from operating at a water flow which is too low.



It is very important to install the flowswitch as shown in the figure. Observe the position of the flowswitch in relation to the direction of the water flow. If the flowswitch is mounted in an other position, the unit is not protected properly against freezing.



A terminal (X65A) is provided in the switch box for the electrical connection of the flowswitch (S10L).

- Shut-off valves must be installed at the unit so that normal servicing of the water filter can be accomplished without draining the complete system.
- Air purge valves must be provided at all high points of the system. The vents should be located at points which are easily accessible for servicing.
- The water filter must be installed in front of the unit for removing dirt from the water to prevent damage to the unit or blockage of the evaporator or condenser. The water filter must be cleaned on a regular base.

## WATER QUALITY SPECIFICATIONS

		evaporator water		condenser water		tendency if out of criteria
		circulating water [<20°C]	supply water	circulating water [20°C-60°C]	supply water	
<b>Items to be controlled</b>						
pH	at 25°C	6.8-8.0	6.8-8.0	7.0-8.0	7.0-8.0	A + B
Electrical conductivity	[mS/m] at 25°C	<40	<30	<30	<30	A + B
Chloride ion	[mg Cl <sup>-</sup> /l]	<50	<50	<50	<50	A
Sulfate ion	[mg SO <sub>4</sub> <sup>2-</sup> /l]	<50	<50	<50	<50	A
M-alkalinity (pH 4.8)	[mg CaCO <sub>3</sub> /l]	<50	<50	<50	<50	B
Total hardness	[mg CaCO <sub>3</sub> /l]	<70	<70	<70	<70	B
Calcium hardness	[mg CaCO <sub>3</sub> /l]	<50	<50	<50	<50	B
Silica ion	[mg SiO <sub>2</sub> /l]	<30	<30	<30	<30	B
<b>Items to be referred to</b>						
Iron	[mg Fe/l]	<1.0	<0.3	<1.0	<0.3	A + B
Copper	[mg Cu/l]	<1.0	<0.1	<1.0	<0.1	A
Sulfide ion	[mg S <sup>2-</sup> /l]	not detectable				A
Ammonium ion	[mg NH <sub>4</sub> <sup>+</sup> /l]	<1.0	<0.1	<0.3	<0.1	A
Remaining chloride	[mg Cl/l]	<0.3	<0.3	<0.25	<0.3	A
Free carbide	[mg CO <sub>2</sub> /l]	<4.0	<4.0	<0.4	<4.0	A
Stability index		—	—	—	—	A + B

A = corrosion B = scale

## CONNECTING THE WATER CIRCUIT

The evaporator and condenser are foreseen of GAS male pipe thread for the water inlet and outlet (refer to the outlook diagram). Evaporator and condenser water connections are to be made in accordance with the outlook diagram, respecting the water in- and outlet.

If air, moisture or dust gets in the water circuit, problems may occur. Therefore, always take into account the following when connecting the water circuit:

- Use clean pipes only.
- Hold the pipe end downwards when removing burrs.
- Cover the pipe end when inserting it through a wall so that no dust and dirt enter.





- Use a good thread sealant for the sealing of the connections. The sealing must be able to withstand the pressures and temperatures of the system, it must also be resistant to the used glycol in the water.
- The exterior of the water pipes must be adequately protected against corrosion.

## WATER CHARGE, FLOW AND QUALITY

To assure proper operation of the unit a minimum water volume is required in the system and the water flow through the evaporator must be within the operation range as specified in the table below.

	Minimum water volume (l)	Minimum water flow	Maximum water flow
EWWP014	62	19 l/min	75 l/min
EWWP022	103	31 l/min	123 l/min
EWWP028	134	40 l/min	161 l/min
EWWP035	155	47 l/min	186 l/min
EWWP045	205	62 l/min	247 l/min
EWWP055	268	80 l/min	321 l/min
EWWP065	311	93 l/min	373 l/min

 The water pressure should not exceed the maximum working pressure of 10 bar.


**NOTE**  Provide adequate safeguards in the water circuit to make sure that the water pressure will never exceed the maximum allowable working pressure.

## PIPING INSULATION

The complete water circuit, inclusive all piping, must be insulated to prevent condensation and reduction of the cooling capacity.

Protect the water piping against water freezing during winter period (e.g. by using a glycol solution or heatertape).

## FIELD WIRING

 All field wiring and components must be installed by a licensed electrician and must comply with relevant European and national regulations.

The field wiring must be carried out in accordance with the wiring diagram supplied with the unit and the instructions given below.


Be sure to use a dedicated power circuit. Never use a power supply shared by another appliance.

## Parts table

F1,2,3	Main fuses for the unit
H3P	Indication lamp alarm
H4P, H5P	Indication lamp operation compressor circuit 1, circuit 2
PE	Main earth terminal
S7S	Remote cooling/heating change-over valve or dual setpoint
S9S	Remote start/stop switch or dual setpoint
- -	Field wiring

## Power circuit and cable requirements

- The electrical power supply to the unit must be arranged so that it can be switched on or off independently of the electrical supply to other items of the plant and equipment in general.
- A power circuit must be provided for connection of the unit. This circuit must be protected with the required safety devices, i.e. a circuit breaker, a slow blow fuse on each phase and an earth leak detector. Recommended fuses are mentioned on the wiring diagram supplied with the unit.

 Switch off the main isolator switch before making any connections (switch off the circuit breaker, remove or switch off the fuses).

## Connection of the water-cooled water chiller power supply

- Using the appropriate cable, connect the power circuit to the N, L1, L2 and L3 terminals of the unit (cable section 2.5~10 mm<sup>2</sup>).
- Connect the earth conductor (yellow/green) to the earthing terminal PE.

## Point for attention regarding quality of the public electric power supply

- This equipment complies with EN/IEC 61000-3-11<sup>(1)</sup> provided that the system impedance  $Z_{sys}$  is less than or equal to  $Z_{max}$  at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a system impedance  $Z_{sys}$  less than or equal to  $Z_{max}$ .


	$Z_{max}$ (Ω)
EWWP014	0.28
EWWP022	0.23
EWWP028	0.22
EWWP035	0.21
EWWP045	0.22
EWWP055	0.21
EWWP065	0.20

- Only for EWWP028~065: Equipment complying with EN/IEC 61000-3-12<sup>(2)</sup>

## Interconnection cables

- Voltage free contacts**  
The PCB is provided with some voltage free contacts to indicate the status of the unit. These voltage free contacts can be wired as described on the wiring diagram.
- Remote inputs**  
Besides the voltage free contacts, there are also possibilities to install remote inputs. They can be installed as shown on the wiring diagram.

## BEFORE STARTING

 The unit should not be started, not even for a very short period of time, before the following pre-commissioning checklist is filled out completely.

tick ✓ when checked	standard steps to go through before starting the unit
<input type="checkbox"/>	<b>1</b> Check for <b>external damage</b> .
<input type="checkbox"/>	<b>2</b> Install <b>main fuses, earth leak detector and main switch</b> . Recommended fuses: aM according to IEC standard 269-2. Refer to the wiring diagram for size.
<input type="checkbox"/>	<b>3</b> Supply the main voltage and check if it is within the allowable $\pm 10\%$ limits of the nameplate rating. The electrical <b>main power supply</b> must be arranged so, that it can be switched on or off independently of the electrical supply to other items of the plant and equipment in general. Refer to the wiring diagram, terminals N, L1, L2 and L3.
<input type="checkbox"/>	<b>4</b> Supply water to the evaporator and verify if <b>waterflow</b> is within the limits as given in the table under " <b>Water charge, flow and quality</b> " on page 3.
<input type="checkbox"/>	<b>5</b> The piping must be completely <b>purged</b> . See also chapter " <b>Checking the water circuit</b> " on page 2.
<input type="checkbox"/>	<b>6</b> Connect the <b>flowswitch</b> and <b>pumpcontact</b> , so that the unit can only come in operation when the waterpumps are running and the waterflow is sufficient. Make sure a water filter is installed before the water inlet of the unit.
<input type="checkbox"/>	<b>7</b> Connect the optional field wiring for <b>pumps start-stop</b> .
<input type="checkbox"/>	<b>8</b> Connect the optional field wiring for <b>remote control</b> .

(1) European/International Technical Standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current  $\leq 75$  A.

(2) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current  $> 16$  A and  $\leq 75$  A per phase.

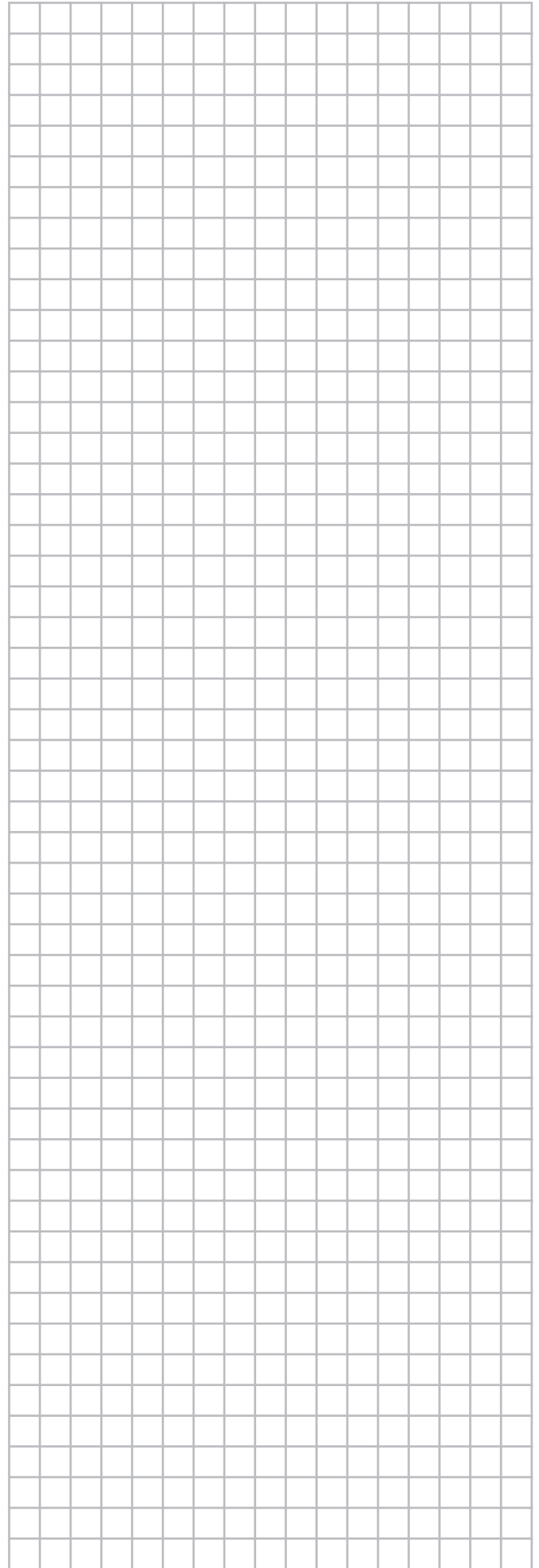
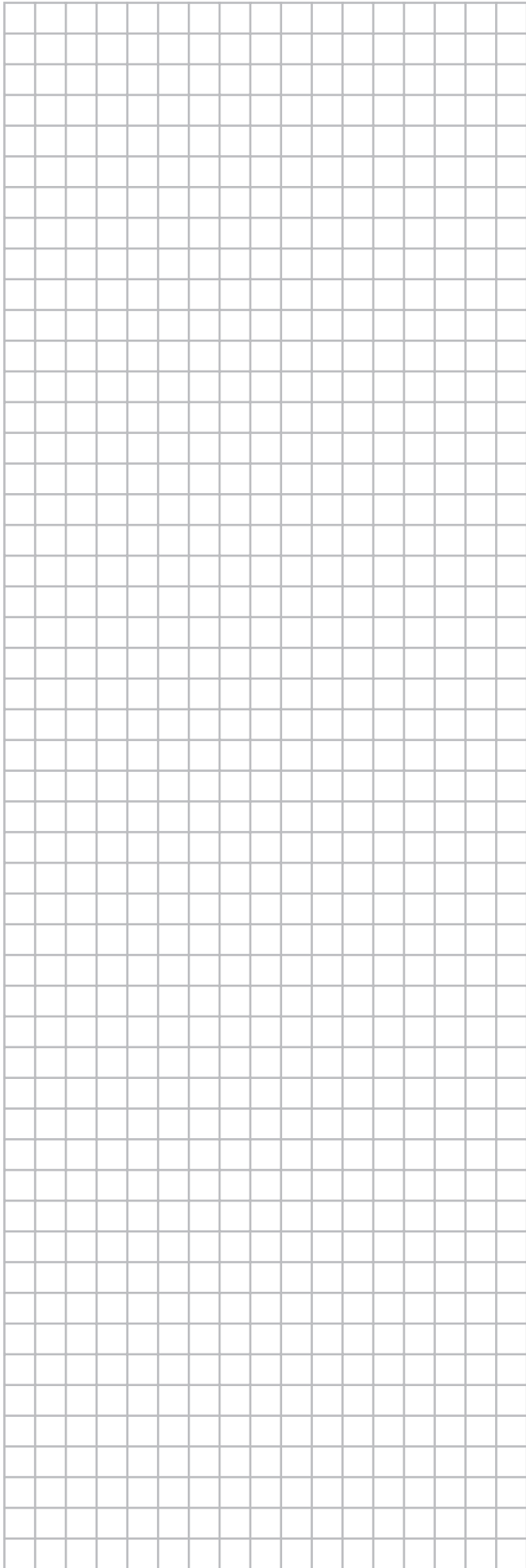


# NOTES

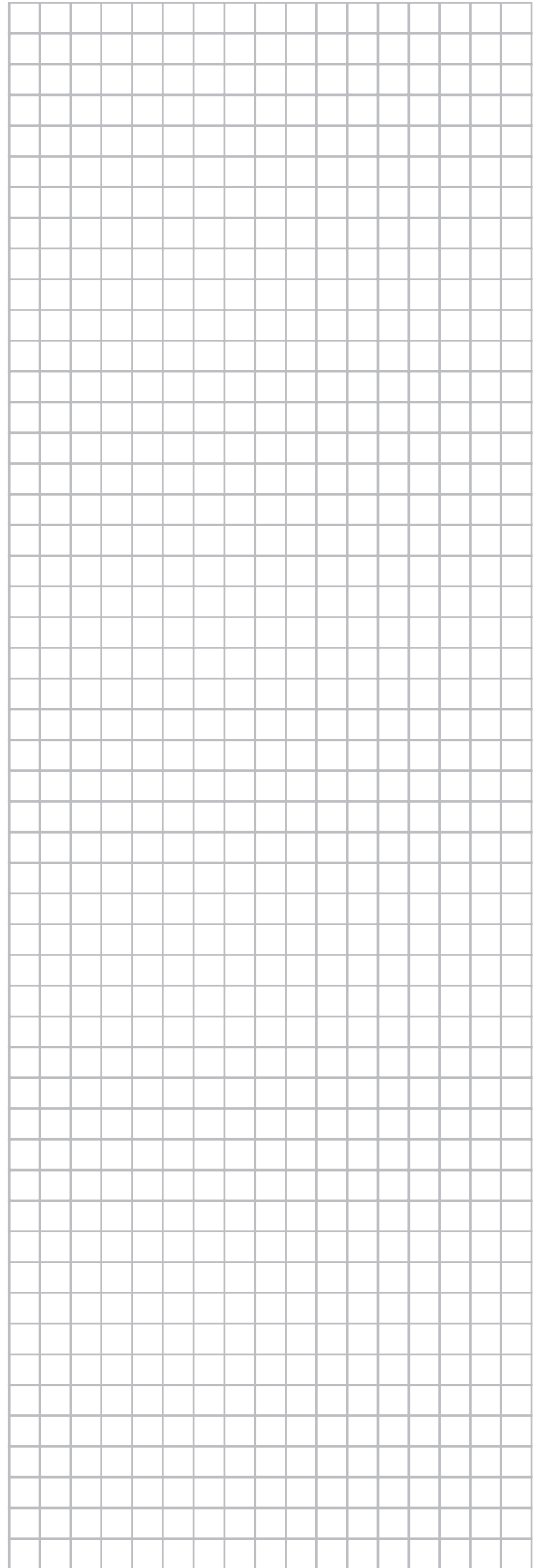
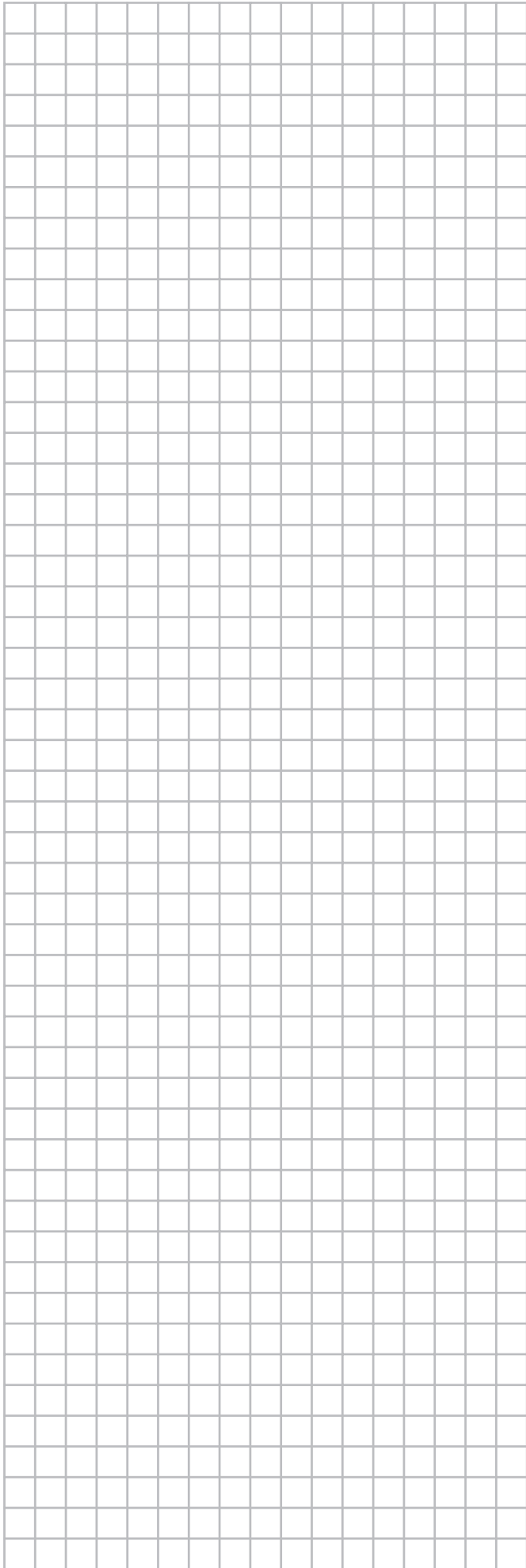
A large grid of graph paper for taking notes, consisting of 20 columns and 40 rows of small squares.



# NOTES



# NOTES



# BRIEF OPERATION INSTRUCTIONS

## EWWP-KB Packaged water-cooled water chiller

Equipment supplier: \_\_\_\_\_

Service department: \_\_\_\_\_

.....  
 .....  
 .....

.....  
 .....  
 .....

Phone:.....

Phone:.....

### EQUIPMENT TECHNICAL DATA

Manufacturer	: DAIKIN EUROPE .....	Power supply (V/Ph/Hz/A)	: .....
Model	: .....	Maximum high pressure	: .....30.9 bar
Serial Number	: .....	Charging weight (kg) R407C	: .....
Year of construction	: .....		

### START-UP AND SHUT DOWN

- Start-up by switching on the circuit breaker of the power circuit. The operation of the water chiller is then controlled by the Digital Display Controller.
- Shut-down by switching off the controller and the circuit breaker of the power circuit.



#### WARNINGS

**Emergency shut down** : Switch off the **circuit breaker** located on .....

.....

.....

**Air inlet and outlet** : Always keep the air inlet and outlet free to obtain the maximum cooling capacity and to prevent damage to the installation.

**Refrigerant charge** : Use refrigerant R407C only.

**First aid** : In case of injuries or accidents immediately inform:



➤ **Company management** : **Phone** .....

➤ **Emergency physician** : **Phone** .....

➤ **Fire service** : **Phone** .....





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4PW61659-1 07.2010