

# SOLUTIONS FOR SERVER ROOMS



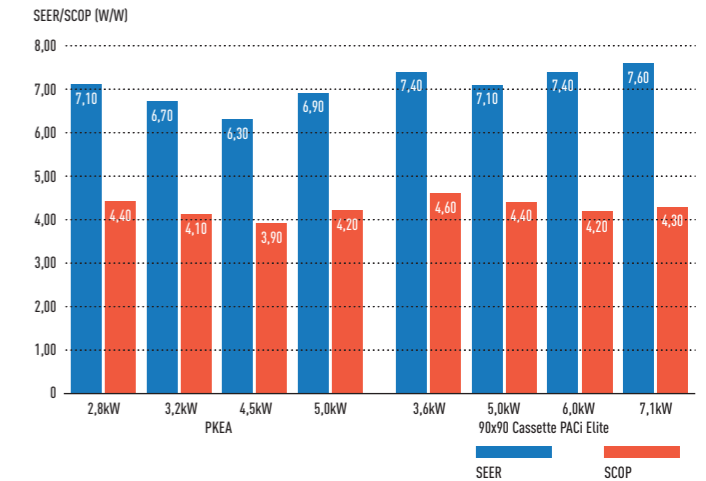
High efficiency products for 24/7 applications. Panasonic has developed a complete range of solutions for server rooms which efficiently protect your servers, keeping them at an appropriate temperature even when the outdoor temperature is below -20°C.

### High efficiency all the year

On 24/7 operation, the performance of the air conditioning is a key factor. When the efficiency is high, the return on investment of such units is quickly reached.

### Key points

- From 2,8 to 5kW with PKEA units, from 3,6 to 14kW with PACi units
- Backup function
- Redundancy function
- Alternative run function
- Error information by dry contact
- Operation even at -20°C outdoor temperature
- Excellent performance with excellent SEER
- Product design for 24/7 operation

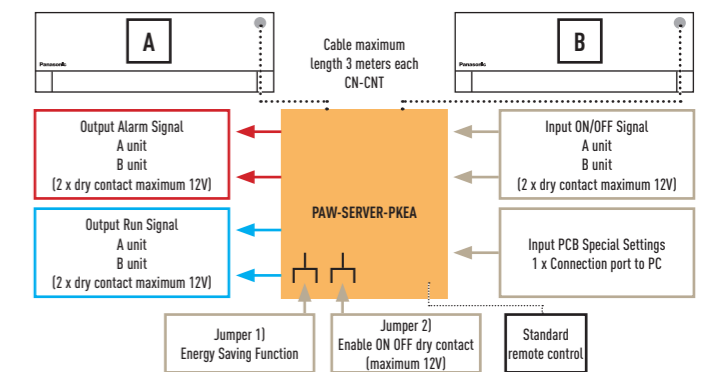


### Interface to run 2 PKEA. PAW-SERVER-PKEA

The PAW-SERVER-PKEA server room interface manages redundancy and backup of two PKEA units with two different selectable modes:

- Plug and play by embedded redundancy and backup algorithm (no external signal needed. Further details please refer to operation manual)
- External (third party PLC) redundancy and backup management by dry contact

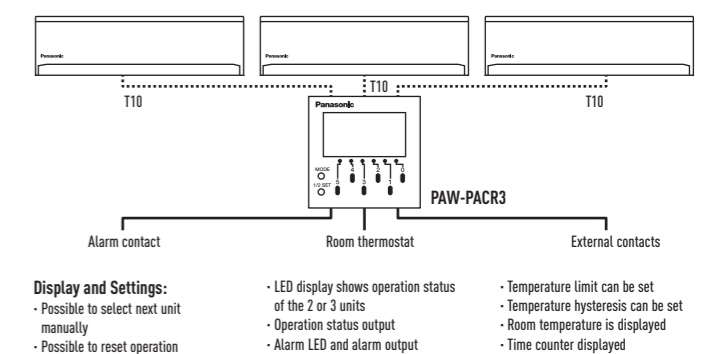
All settings are possible without the need for a computer connection. A special Energy Saving Mode is selectable by deep switch (available only in plug and play mode). The level of remote control input prohibition can be set when external management is by dry contact.



### Interfaces to run 2 or up to 3 PACi and VRF Range

#### PAW-PACR3

In combination with one PAW-T10V on each indoor unit, allows the redundant operation of 2 (or 3) PACi or VRF indoor units. All units will be operated by programmable turns in order to achieve the same operating time (example turn every 8 hours with 24 hours). If the room temperature exceeds a freely set value, the 2nd (or 3rd) unit will be switched ON and an alarm will be activated.



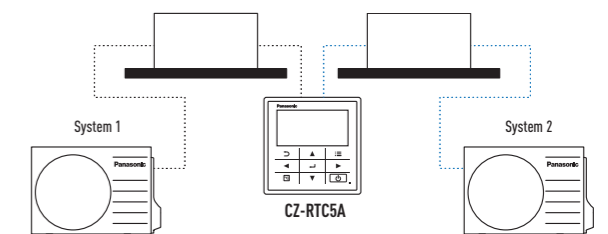
#### Backup control by using CZ-RTC5A

Group wiring of 2 systems of PACi can do auto individual control.

- Rotation operation
- Backup operation
- Support operation

#### CZ-CAPRA1

New Domestic with CZ-CNT port integration to PACi and ECOi.



# WALL MOUNTED PKEA PROFESSIONAL INVERTER -20°C

SERVER ROOM SOLUTION WITH THE HIGHEST EFFICIENCY OF THE MARKET  
24/7 OPERATION

## Complete line-up with high efficiency even at -20°C

### High durability for 24/7 operation

#### Indoor Fan. Cross-Flow-Fan

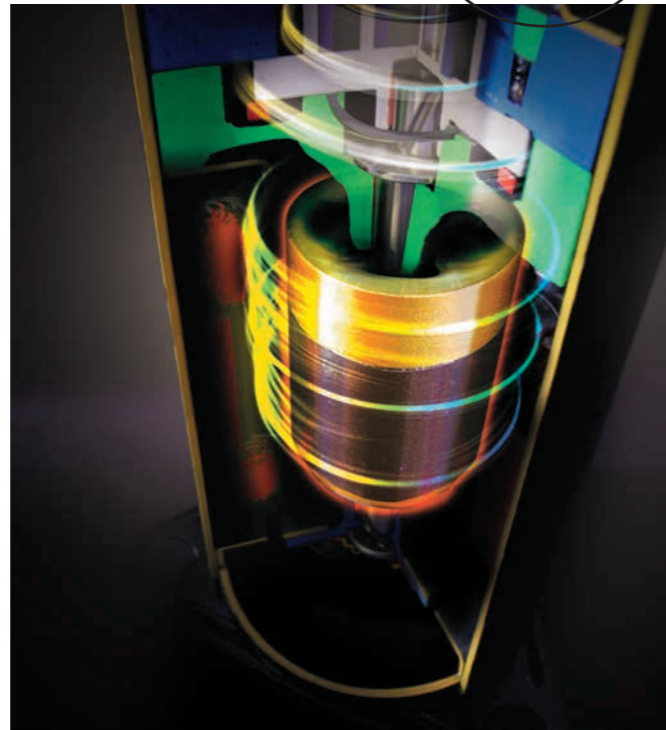
- High durability rolling bearings, large size (φ105mm) fan
- High efficiency blade
- Random pitch blade (low sound)

#### Compressor

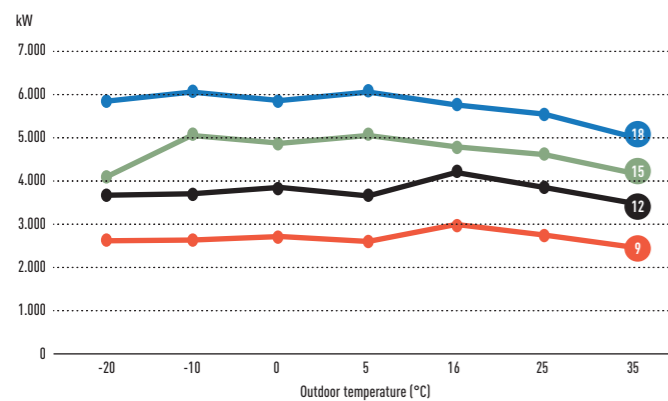
DC2P Panasonic original compressor, with high efficiency and reliability.

### Why is the Panasonic R2 Rotary Compressor so efficient?

1. High efficiency motor: the premium silicon steel motor meets industry efficiency requirements
2. Improved lubrication of high volume oil pump: the extended, high volume oil pump in conjunction with a larger capacity oil reservoir provides superior lubrication
3. Accumulator has larger refrigerant capacity: the larger accumulator accommodates generous refrigerant amounts needed in longer line length installations



## PKEA provides high capacity at -20°C!

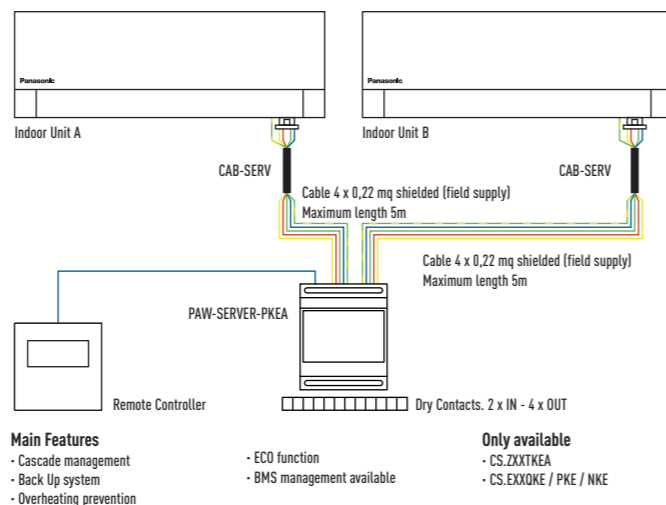


### Interface option to manage server room operation

The PAW-SERVER-PKEA server room interface manages redundancy and backup of two PKEA units with two different selectable modes:

- Plug and play by embedded redundancy and backup algorithm (no external signal needed. Further details please refer to operation manual)
- External (third party PLC) redundancy and backup management by dry contact

All settings are possible without the need for a computer connection. A special Energy Saving Mode is selectable by deep switch (available only in plug and play mode). The level of remote control input prohibition can be set when external management is by dry contact.



Included on the kit. Timer remote controller



This Wall Mounted air conditioner is especially designed for professional applications such as computer rooms where cooling inside the room is necessary even when the outside temperature is low. Furthermore this air conditioner has an automatic changeover system, in order to maintain the inside temperature even when sharp outside temperature changes occur.

- Highly efficient even at -20°C
- High durability rolling bearings
- Additional piping sensors to prevent freezing

### Outdoor Features

- Cooling even when ambient temperature is as low as -20°C
- Electronic expansion valve (accurate sub-cooling and adjustable refrigerant flow)
- Outdoor DC fan motor to provide flexible air-flow to ensure optimum condensation pressure (works on outdoor pipe temperature sensor)

### Technical focus

- This units can be installed on R22 pipings
- Designed for 24h/7d a week operation

### WALL MOUNTED PKEA

		Single Phase				
		2.8kW KIT-E9-PKEA	3.2kW KIT-E12-PKEA	4.5kW KIT-E15-PKEA	5.0kW KIT-E18-PKEA	
Cooling capacity	Nominal (Min - Max)	kW	2.50 (0.85 - 3.00)	3.50 (0.85 - 4.00)	4.20 (0.98 - 5.00)	5.00 (0.98 - 6.00)
EER <sup>1)</sup>	Nominal (Min - Max)	W/W	4.85 (4.23 - 5.00)	4.02 (3.57 - 5.00)	3.50 (3.50 - 3.16)	3.47 (3.50 - 3.02)
Cooling capacity at -10°C		kW	2.63	3.69	5.04	6.00
EER at -10°C		W/W	7.19	5.96	6.01	6.00
Cooling capacity at -20°C		kW	2.61	3.66	4.06	5.82
EER at -20°C		W/W	6.71	5.56	4.39	5.39
SEER <sup>2)</sup>		W/W	7.10 <b>A++</b>	6.70 <b>A++</b>	6.30 <b>A++</b>	6.90 <b>A++</b>
Pdesign		kW	2.5	3.5	4.2	5.0
Input power cooling	Nominal (Min - Max)	kW	0.52 (0.17 - 0.71)	0.87 (0.17 - 1.12)	1.20 (0.28 - 1.58)	1.44 (0.28 - 1.99)
Annual electricity consumption (cooling) <sup>3)</sup>		kWh/a	123	183	233	254
Heating capacity	Nominal (Min - Max)	kW	3.40 (0.85 - 5.40)	4.00 (0.85 - 6.60)	5.40 (0.98 - 7.10)	5.80 (0.98 - 8.00)
Heating capacity at -7°C <sup>4)</sup>		kW	3.33	4.07	4.10	4.98
COP <sup>1)</sup>	Nominal (Min - Max)	W/W	4.86 (4.12 - 5.15)	4.35 (3.63 - 5.15)	3.75 (2.88 - 3.24)	3.82 (2.88 - 3.11)
SCOP <sup>5)</sup>		W/W	4.40 <b>A+</b>	4.10 <b>A+</b>	3.90 <b>A</b>	4.20 <b>A+</b>
Pdesign at -10°C		kW	2.8	3.6	3.6	4.4
Input power heating	Nominal (Min - Max)	kW	0.70 (0.165 - 1.31)	0.92 (0.17 - 1.82)	1.44 (0.34 - 2.19)	1.52 (0.34 - 2.57)
Annual electricity consumption (heating) <sup>3)</sup>		kWh/a	891	1.229	1.292	1.467
<b>Indoor Unit</b>			<b>CS-E9PKEA</b>	<b>CS-E12PKEA</b>	<b>CS-E15PKEA</b>	<b>CS-E18PKEA</b>
Power source		V	230	230	230	230
Recommended fuse		A	16	16	16	16
Connection indoor / outdoor		mm	4 x 1.5	4 x 1.5	4 x 1.5	4 x 2.5
Current	Cooling / Heating	A	2.5 / 3.3	4.0 / 4.2	5.4 / 6.5	6.4 / 6.8
Max. Current		A	7.8	8.4	9.6	11.3
Air Volume	Cooling / Heating	m <sup>3</sup> /min	13.3 / 14.6	13.6 / 14.7	14.1 / 15.0	17.9 / 19.3
Moisture removal volume		L/h	1.5	2.0	2.4	2.8
Sound pressure <sup>6)</sup>	Cooling (Hi / Lo / S-Lo)	dB(A)	39 / 26 / 23	42 / 29 / 26	43 / 32 / 29	44 / 37 / 34
	Heating (Hi / Lo / S-Lo)	dB(A)	40 / 27 / 24	42 / 33 / 29	43 / 35 / 29	44 / 37 / 34
Sound power	Cooling / Heating (Hi)	dB	55 / 56	58 / 58	59 / 59	60 / 60
Dimensions / Net weight	H x W x D	mm / kg	295 x 870 x 255 / 10	295 x 870 x 255 / 10	295 x 870 x 255 / 10	295 x 1.070 x 255 / 13
<b>Outdoor Unit</b>			<b>CU-E9PKEA</b>	<b>CU-E12PKEA</b>	<b>CU-E15PKEA</b>	<b>CU-E18PKEA</b>
Air Volume	Cooling / Heating	m <sup>3</sup> /min	31.3 / 29.7	32.9 / 32.1	34.2 / 33.0	39.2 / 37.9
Sound pressure <sup>6)</sup>	Cooling / Heating (Hi)	dB(A)	46 / 47	48 / 50	46 / 46	47 / 47
Sound power	Cooling / Heating (Hi)	dB	61 / 62	63 / 65	61 / 61	61 / 61
Dimensions <sup>7)</sup> / Net weight	H x W x D	mm / kg	622 x 824 x 299 / 36	622 x 824 x 299 / 36	695 x 875 x 320 / 45	695 x 875 x 320 / 46
Piping connections	Liquid pipe / Gas pipe	Inch (mm)	1/4 (6.35) / 3/8 (9.52)	1/4 (6.35) / 3/8 (9.52)	1/4 (6.35) / 1/2 (12.70)	1/4 (6.35) / 1/2 (12.70)
Piping length range / Elevation difference (in/out) <sup>8)</sup>		m	3 - 15 / 5	3 - 15 / 5	3 - 15 / 15	3 - 20 / 15
Pipe length for additional gas / Additional gas amount	m / g/m		7.5 / 20	7.5 / 20	7.5 / 20	7.5 / 20
Refrigerant loading	R410A	kg	1.10	1.10	1.06	1.24
Operating range	Cooling Min / Max	°C	-20 ~ +43	-20 ~ +43	-20 ~ +43	-20 ~ +43
	Heating Min / Max	°C	-15 ~ +24	-15 ~ +24	-15 ~ +24	-15 ~ +24

Rating Conditions for cooling capacity at low temperature: Cooling Indoor 27°C DB / 19°C WB. Cooling Outdoor 0°C DB / -10°C WB.

1) EER and COP, Energy Saving Classification, is at 220 / 240V (380 / 415V) only in accordance with EU directive 2002/31/EC. 2) SEER is calculated in base Eurovent IPLV for SBEM for U1 indoor unit SEER=a(EER25)+b(EER50)+c(EER75)+d(EER100) where EER25, EER50, EER75 and EER100 are the EER measured value at 25%, 50%, 75% and 100% part load for temperatures 20, 25, 30 and 35°C DB, respectively. a, b, c and d are values assigned for an office type. These values are given as a=0.2, b=0.36, c=0.32 and d=0.03. The internal temperatures are taken at 27°C DB and 19°C WB. 3) The annual consumption (ErP) is calculated by formula determined by ErP regulation. 4) Heating capacity is calculated including defrost factor correction. 5) SCOP is calculated in base Eurovent IPLV for SBEM with U1 indoor unit including defrost correction factor. 6) The Sound pressure of the units shows the value measured of a position 1 meter in front of the main body and 1.5m from the ground. The sound pressure is measured in accordance with Eurovent 6/C/006-97 specification. 7) Add 70mm for piping port. 8) When installing the outdoor unit at a higher position than the indoor unit. // Recommended fuse for the indoor 3A.



SEER and SCOP: For KIT-E9-PKEA. SUPER QUIET: For KIT-Z25-TKEA. INTERNET CONTROL: Optional. Compatible with all Panasonic connectivity solutions. For detailed information go to the Control Systems section.

Rating Conditions: Cooling Indoor 27°C DB / 19°C WB. Cooling Outdoor 35°C DB / 24°C WB. Heating Indoor 20°C DB. Heating Outdoor 7°C DB / 4°C WB. (DB: Dry Bulb; WB: Wet Bulb) Specifications subject to change without notice. For detailed information about ErP, please visit our websites www.aircon.panasonic.eu or www.plc.panasonic.eu.

