

FSV Controllers

A wide variety of control options to meet the requirements of different applications.

ECONAVI ECONAVI Sensor CZ-CENSC1



Utilises ECONAVI Sensor and Control Program technologies to detect where energy is normally wasted and self-adjusts cooling power to reduce energy waste.

- Activity detection
- Absence detection

OPERATION SYSTEM	INDIVIDUAL CONTROL SYSTEMS		
Requirements	Advanced operation	Normal operation	Operation from anywhere in the room
External appearance			
Type, model name	Deluxe Wired Remote Controller CZ-RTC5B	Timer Remote Controller (Wired) CZ-RTC4	Wireless Remote Controller CZ-RWSU3 CZ-RWSL2N CZ-RWSC3 CZ-RWSD2 CZ-RWST3N CZ-RWSK2
Built-in thermostat	●	●	●
ECONAVI ON/OFF control	●	●	—
Number of indoor units which can be controlled	1 group, 8 units	1 group, 8 units	1 group, 8 units
Use limitations	· Up to 2 controllers can be connected per group (When using ECONAVI sensor, only one remote controller is possible to connect at indoor unit)	· Up to 2 controllers can be connected per group (When using ECONAVI sensor, only one remote controller is possible to connect at indoor unit)	· Up to 2 controllers can be connected per group.
Function ON/OFF	●	●	●
Mode setting	●	●	●
Fan speed setting	●	●	●
Temperature setting	●	●	●
Air flow direction	●	●	●
Permit/Prohibit switching	—	—	—
Weekly program	●	●	—

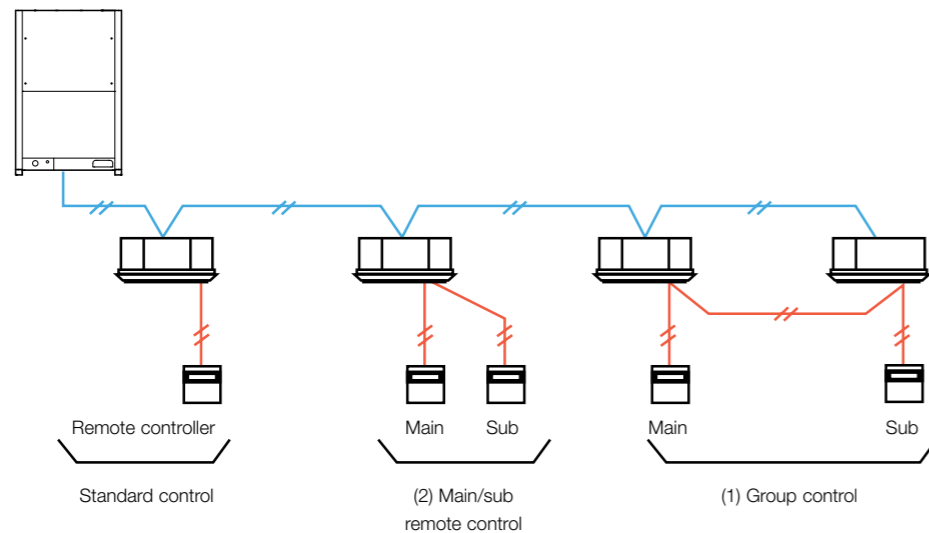
All specifications are subject to change without notice.

CENTRALISED CONTROL SYSTEMS			
Operation with various functions from a central location	Only ON/OFF operation from a central location	Simplified load distribution ratio (LDR) for each tenant 10.4 in. touch screen panel colour LCD	Connection with 3rd Party Controller
			Seri-Para I/O unit for outdoor unit
System Controller CZ-64ESMC3	ON/OFF Controller CZ-ANC3	Intelligent Controller CZ-256ESMC3 (CZ-CFUNC2)	Interface Adaptor
—	—	—	Seri-Para I/O unit for each indoor unit
●	—	●	Communication Adaptor
64 groups, maximum 64 units	16 groups, maximum 64 units	64 units x 16 systems, maximum 256 units	LonWorks Interface
· Up to 10 controllers, can be connected to one system. · Main unit/sub unit (1 main unit + 1 sub unit) connection is possible. · Use without remote controller is possible.	· Up to 8 controllers (4 main units + 4 sub units) can be connected to one system. · Use without remote controller is impossible.	· A communication adaptor (CZ-CFUNC2) must be installed for three or more links.	
●	●	●	
●	—	●	
●	—	●	
●	—	●	
●	—	●	
●	●	●	
●	—	●	

Individual Control Systems

Control contents	Part name, model No.	Quantity
Standard Control <ul style="list-style-type: none"> Control of the various operations of the indoor unit by wired or wireless remote controller. Cooling or heating mode of the outdoor unit is decided by the first priority of the remote controller. Switching between remote controller sensor and body sensor is possible. 	Timer remote controller CZ-RTC4 / CZ-RTC5B Wireless remote controller CZ-RWSU3 / CZ-RWSL2N / CZ-RWSC3 / CZ-RWSK2 / CZ-RWST3N / CZ-RWSD2	1 unit each
(1) Group control <ul style="list-style-type: none"> Batch remote control on all indoor units. Operation of all indoor units in the same mode. Up to 8 units can be connected. The sensor is the body sensor, and thermostat ON/OFF setting in regard to the temperature set by the remote controller is possible for each indoor unit. 	Timer remote controller CZ-RTC4 / CZ-RTC5B Wireless remote controller CZ-RWSU3 / CZ-RWSL2N / CZ-RWSC3 / CZ-RWSK2 / CZ-RWST3N / CZ-RWSD2	1 unit
(2) Main/sub remote control <ul style="list-style-type: none"> Maximum 2 remote controllers per indoor unit. (Main remote controller can be connected) The button pressed last has priority. Timer setting is possible even with the sub remote controller. (When using ECONAVI sensor, only one remote controller is possible to connect at indoor unit) 	Main or sub Timer remote controller CZ-RTC4 / CZ-RTC5B Wireless remote controller CZ-RWSU3 / CZ-RWSL2N / CZ-RWSC3 / CZ-RWSK2 / CZ-RWST3N / CZ-RWSD2	As required

SYSTEM EXAMPLE FSV-EX



Deluxe wired remote controller (CZ-RTC5B)



Energy Saving

- ECONAVI on/ off*
- Temperature Auto Return
- Temperature Setting Range
- Auto Shutoff
- Schedule peak cut
- Repeat off timer

Basic Operation

- Individual Louvre Control (Lock individual flap only for 4-WAY cassette U2 type)
- ON/ OFF timer
- Weekly Timer
- Filter information*
- Outing function
- Quiet operation mode*
- Energy saving
- Initial settings
- Ventilation

Maintenance Function

- Outdoor unit error data
- Service Contact address
- RC setting mode
- Test Run
- Sensor Information
- Service check
- Simple/ Detailed Settings
- Auto address

*Subject to the connected model.

Timer remote controller (CZ-RTC4)



Weekly Programme Function

- A maximum of 6 settings/ day and 42 settings/ week can be programmed.

Outing Function

- This function can prevent the room temperature from dropping or rising when the occupants are out for a long time.

Sleeping Function

- This function controls the room temperature for comfortable sleeping.

Maximum 8 indoor units can be controlled from one remote controller

Remote control by main remote controller and sub controller is possible

Maximum 2 remote controllers (main remote controller and sub controller) can be installed for one indoor unit.

* Depending on the model, some menus cannot be used.

Basic remote controller ON/OFF

- Operation mode changeover (Cooling, Heating, Dry, Auto, Fan).
- Temperature setting (Cooling/Dry: 18-30° Heating: 16-30°g).
- Fan speed setting H/ M/ L and Auto.
- Air flow direction adjustment.
- ECONAVI on/ off*

Time Function 24 hours real time clock

- Day of the week indicator.

Wireless remote controller



Remote control by main remote controller and sub controller is possible

- Maximum 2 remote controllers (main remote controller and sub controller) can be installed for one indoor unit.

When CZ-RWSC3 is used, wireless control becomes possible for all indoor units

- When a separate receiver is set up in a different room, control from that room also becomes possible.
- Automatic operation by means of the emergency operation button is possible even when the remote controller has been lost or the batteries have been exhausted.

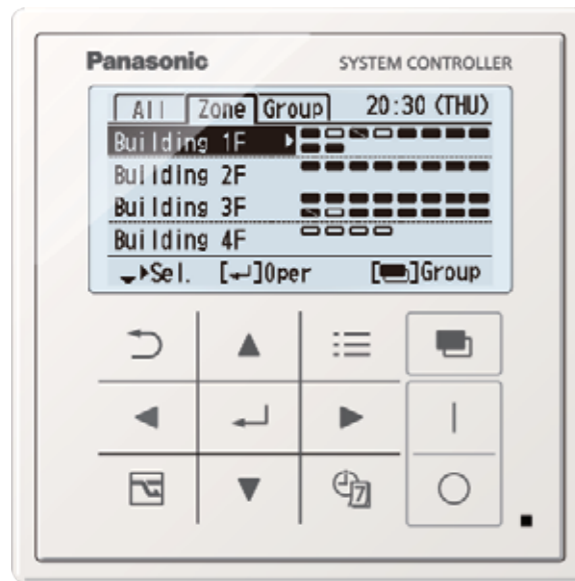
In addition, there are other functions such as temperature setting, operation switching, airflow direction/fan speed setting, etc

Ventilation independent operation is possible

When commercial ventilation fans or heat-exchange ventilation fans have been installed, they can be operated with this remote control (interlocked operation with the indoor unit or independent ventilation ON/OFF).

Centralised Control Systems

System controller (CZ-64ESMC3)



Dimensions
H 120 x W 120 x D 16 + 52
(embedding dimension mm)

Power supply: AC 100 to 240 V
I/O part:
Remote input part (effective voltage:DC24V) All operation, All stop, Demand 1, Demand 2
Remote output part (non voltage contact) Operation, Alarm (external power supply within DC 30V, max 0.5A)
Total wiring length : 1km

Individual control is possible for maximum 64 groups, 64 indoor units.

- Control of 64 indoor units divided into 4 zones. (One zone can have up to 16 groups, and one group can have up to 8 units.)
- Control is possible for ON/OFF, operation mode, fan speed, air flow direction, operation monitoring, alarm monitoring, ventilation, remote controller local operation prohibition, etc.

Prohibition setting for Remote controller operation

Setting mode	ON/OFF	Mode	Temperature	Fan speed	Flap
Permit	●	●	●	●	●
Prohibit 1	—	●	●	●	●
Prohibit 2	—	—	—	●	●
Prohibit 3	●	—	—	●	●
Prohibit 4	●	—	●	●	●

In case of joint use with a wireless remote controller, there are limitations for the control mode. Please use only with setting "Permit" and "Prohibit1 (prohibition for ON/OFF)".

*Contents for Prohibit 1-4 can be modified.

● : Operation from the remote controller is possible.
— : Operation from the remote controller is prohibited.

- Joint use with a remote controller, an intelligent controller, etc. is possible

(The maximum number of connectable system controllers is 10, including other central controllers on the same circuit.)

(In case of joint use with a wireless remote controller, there are limitations for the control mode. Please use only with setting "Permit" and "Prohibit1 (prohibition for ON/OFF)".)

- Control of systems without a remote controller and of main/ sub systems (a total of up to 2 units) is possible

- Weekly timer function

- 8 programs per day (with ON/ OFF/ Mode/ Temperature/ Central control setting items) for 1week (7days) can be set.
- Special holiday setting can ignore the timer operation temporarily by keeping the original timer setting. (Special holiday setting can be removed by same setting display.)

- 5 types of Energy saving function

Set temperature automatic return / Set temperature range limitation / Off remind / Off timer operation / Demand control timer.

- A control mode corresponding to the use condition can be selected from 10 patterns

A : Operation mode: Central control mode or remote control mode can be selected

Central control mode: The system controller is used as centralised control device. (Setting from a remote controller can be prohibited by prohibiting local operation from the system controller.)

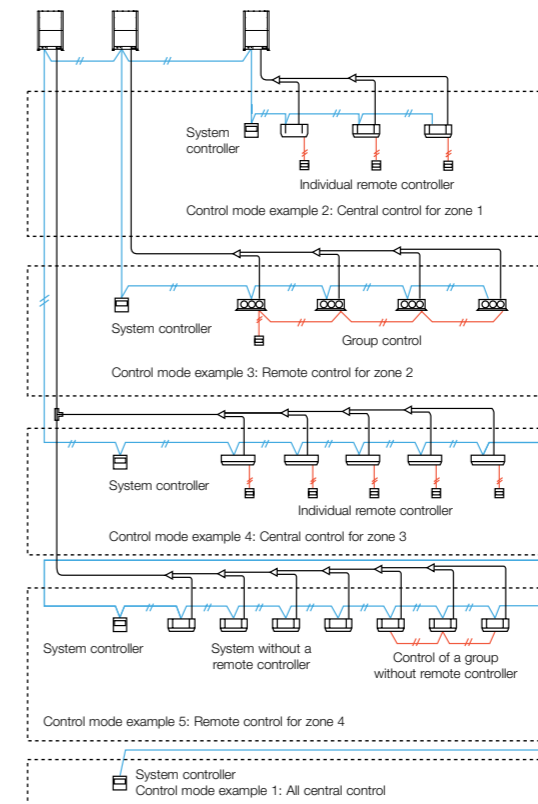
Remote control mode: The system controller is used as a remote controller. (Setting from the system controller can be prohibited by prohibiting local operation from another central control unit.)

B : Controlled unit number mode: All mode or zone 1, 2, 3, 4 mode can be selected

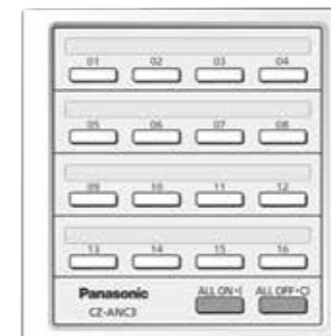
All mode: All, zone, or group unit can be selected.

Zone 1, 2, 3, 4 mode: Setting is possible only for the indoor units of zone 1, 2, 3, or 4.

Connection example		A Operation mode	
		Central control mode	Remote control mode
B Controlled unit number mode	All mode	All central control Example 1	All remote control
	Zone 1 mode	Zone 1 central control Example 2	Zone 1 remote control
	Zone 2 mode	Zone 2 central control	Zone 2 remote control Example 3
	Zone 3 mode	Zone 3 central control Example 4	Zone 3 remote control
	Zone 4 mode	Zone 4 central control	Zone 4 remote control Example 5



ON/OFF controller (CZ-ANC3)



Dimensions
H 121 x W 122 x D 14 + 52
(embedding dimension mm)

Power supply: AC 100 to 240 V
I/O part:
Remote input (effective voltage: within DC 24 V): All ON/OFF
Remote output (allowable voltage: within DC 30 V): All ON, All alarm

- 16 groups of indoor units can be controlled.
- Collective control and individual group (unit) control can also be performed.
- Up to 8 ON/OFF controller (4 main, 4 sub) can be installed in one link system.
- The operation status can be determined immediately.

Intelligent controller (CZ-256ESMC3)



Touch panel

Dimensions
 H 240 x W 280 x D 85mm
 Power supply: AC 100 to 240 V (50/60 Hz)
 LCD: 10.4 in. TFT, XGA(1024 x 768), LED backlight

Product Features

- 10.4 in., Large, easy-to-use colour LCD
 - With Smartphone-like operations, such as swiping and flicking
- Enhanced energy-saving control functions
 - Packed with demand functions
 - Set temperature auto return settings, auto shutoff, set temperature range limit settings
- Energy Visualisation
 - Displays electricity and gas usage distribution
 - Supports energy-saving plans with graph display function

New Features

- Maximum 256 indoor unit [16 systems x 64 units] can be controlled. In case of three or more systems [more than 128 units], a communication adaptor CZ-CFUNC2 must be installed for three or more links.
- Operation is possible as batch, in zone units, and in group units.
- ON/OFF, operation mode setting, temperature setting, for fan speed setting, air flow direction setting (when used without a remote controller) and remote controller local operation prohibition [prohibition 1,2,3,4] can be done
- Graph display [trends, comparisons]
- ECONAVI ON/OFF

- Outdoor unit quiet operation ON/OFF
- Energy-saving Functions
- Event control [such as equipment linkage]
- Limitation contents for prohibited operation

Prohibition means limitation of the operation contents from the remote controller. It is also possible to change the prohibition items.

Limitation contents (Limitations can be user defined)

- Individual There is no limitation for the operation of the remote controller. However, the contents will be changed to the contents of the controller operated last. (Last-pressed priority.)
- Prohibition 1 The remote controller cannot be used for ON/OFF. (All other operations are possible from the remote controller.)
- Prohibition 2 The remote controller cannot be used for ON/OFF, operation mode change and temperature setting. (All other operations are possible from the remote controller.)
- Prohibition 3 The remote controller cannot be used for operation mode change and temperature setting. (All other operations are possible from the remote controller.)
- Prohibition 4 The remote controller cannot be used for operation mode change. (All other operations are possible from the remote controller.)

Remote Control

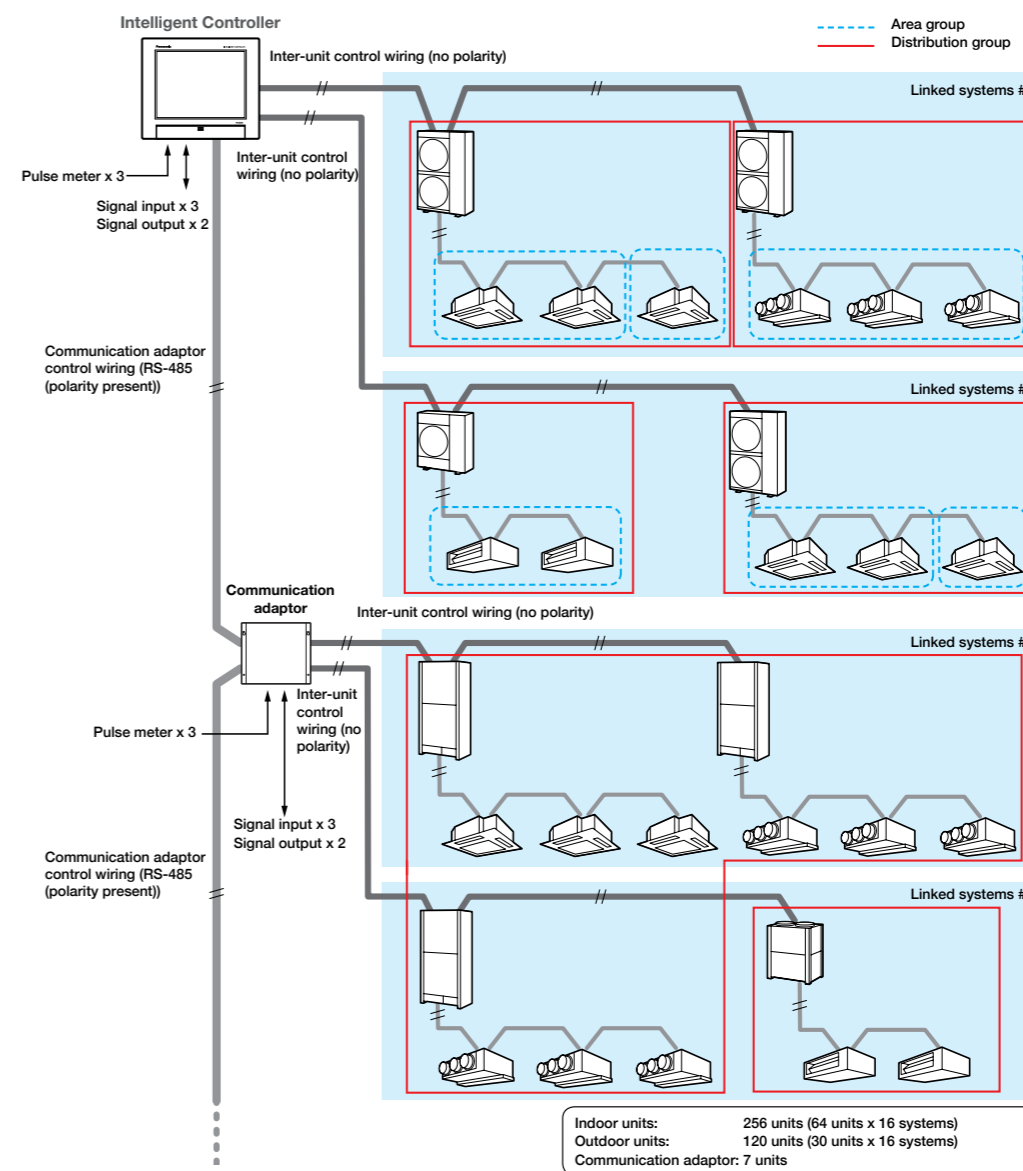
The LAN terminal on this unit enables you connect it to a network. Connecting to internet will enable you to operate the unit and check the status using a PC from remote location.



Display image on the remote PC is same design as the controller unit.

System configuration

The following is an example of a system configuration.



Communication adaptor (CZ-CFUNC2)



* Required when more than 129 indoor units are connected.



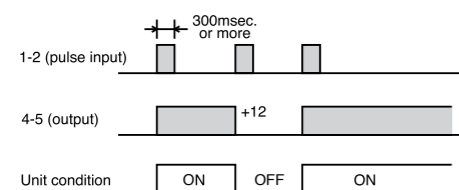
T10 Terminal for External Control (Digital Connection)

Connecting an FSV indoor unit to an external device is easy. The T10 Terminal featured in the electronic circuit board of all indoor units enables digital connection to external devices.



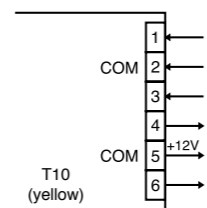
1. T10 Terminal Specification (T10:CN061 at indoor unit PCB)

- Control items:
 1. Start/stop input (eg hotel key card, push button operation)
 2. Remote controller prohibit input
 3. Operation status output (eg fresh air fan)
 4. Fault status output



NOTE: The wire length from indoor unit to the Relay must be within 2.0m. Pulse signal changeable to static with JP cutting. (Refer to JP001)

Example of wiring



Condition

- 1-2 (Pulse input): Unit ON/OFF condition switching with a pulse signal. (1 pulse signal: shortage status more than 300msec.or more)
- 2-3 (Static input): Open/ Operation with Remote is permitted.(Normal condition) Close/ Remote controller is prohibited.
- 3-4-5 (Static output): 12V output during the unit ON. / No output at OFF.
- 4-5-6 (Static output): 12V output when some errors occur / No output at normal.

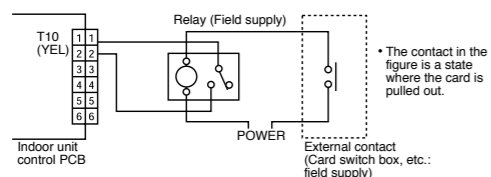
2. Usage Example

Forced OFF control

Condition

1-2 (Static input): Close/ Operation with Remote is permitted. (Normal condition) Open/ Unit is forcibly OFF and Remote controller operation is prohibited.

Example of wiring



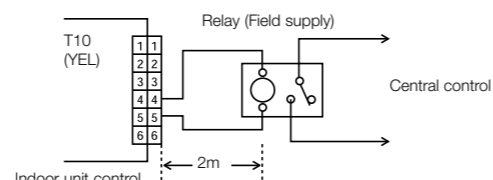
NOTE: The wire length from indoor unit to the Relay must be within 2.0m

Operation ON/OFF signal output

Condition

4-5 (Static output): 12V output during the unit ON / No output at OFF

Example of wiring



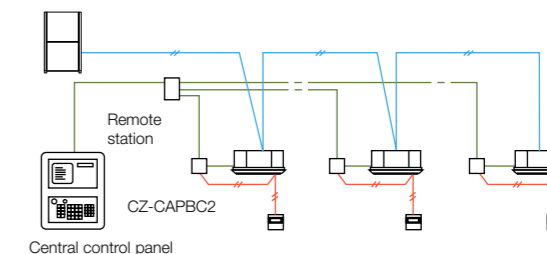
NOTE: The wire length from indoor unit to the Relay must be within 2.0m. Pulse signal changeable to static with JP cutting. (Refer to JP001)

Interfaces for External Control (Digital Connection)

Seri-Para I/O unit for each indoor unit (CZ-CAPBC2)



System example

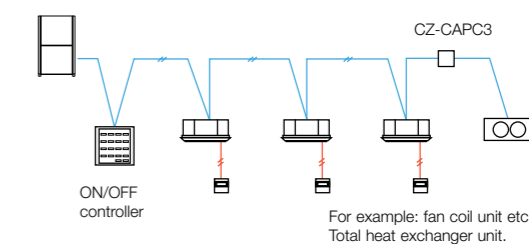


- Control and status monitoring is possible for individual indoor unit (1 group).
- In addition to operation and stop, there is a digital input function for air speed and operation mode.
- Temperature setting and measuring of the indoor suction temperature can be performed from central monitoring.
- The analogue input for temperature setting is 0 to 10 V, or 0 to 140 Ohm.
- Power is supplied from the T10 terminal of the indoor units.
- Separate power supply also is possible (in case of suction temperature measuring).

Interface adaptor (CZ-CAPC3)



System example

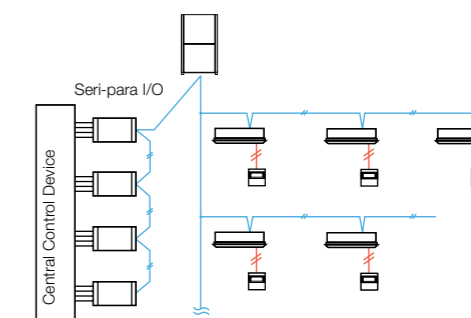


- Control and status monitoring is possible for individual indoor unit (or any external electrical device up to 250 V AC, 10 A) by contact signal.

Seri-Para I/O unit for outdoor unit (CZ-CAPDC2)



System example

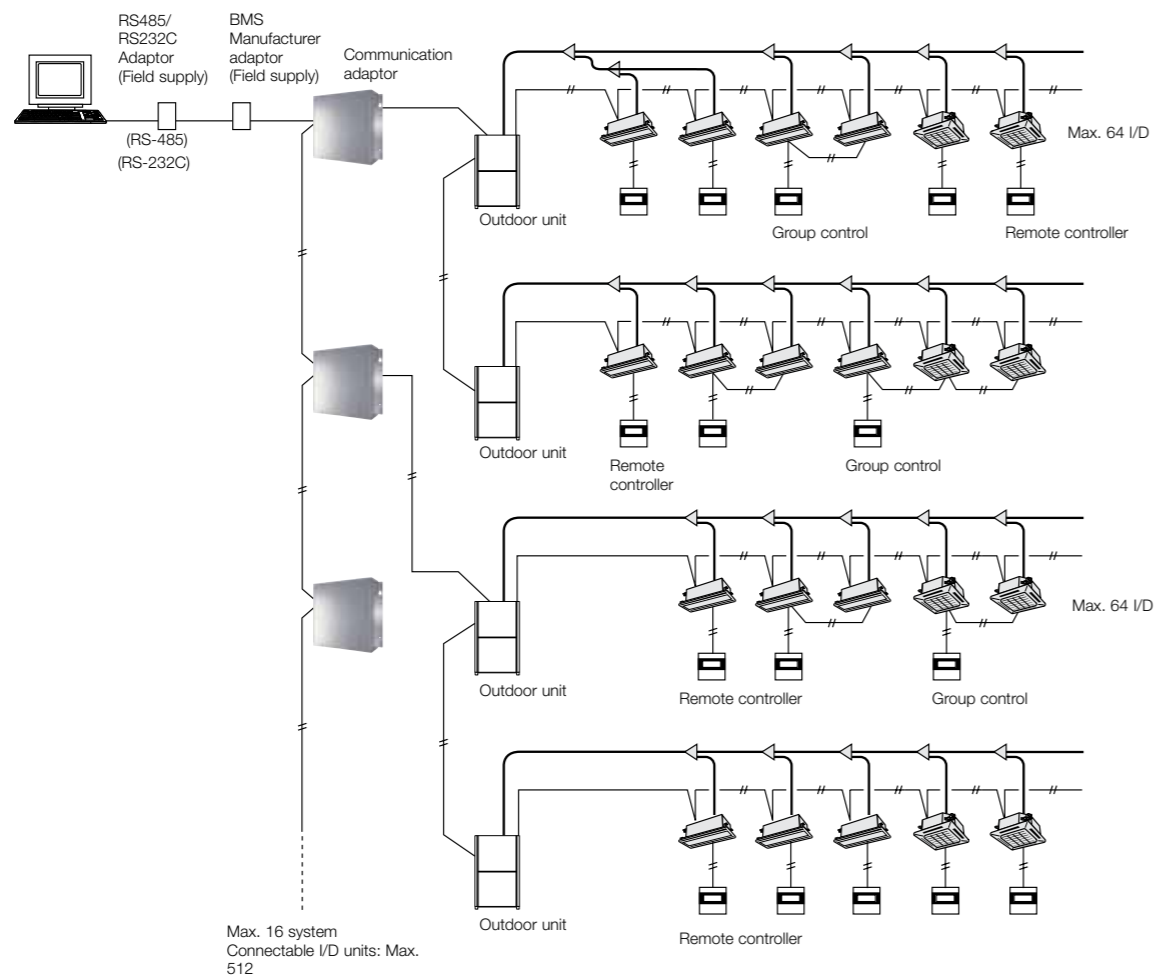


- Dimensions: H 80 x W 290 x D 260mm
- Power supply: Single phase 110-120/220-240V (50/60 Hz), 18W
- Input: Batch operation/Batch stop (non-voltage contact/DC 24V, pulse signal). Cooling/Heating (non-voltage contact/static signal). Demand 1/2 (non-voltage contact/static signal) (Local stop by switching)
- Output: Operation output (non-voltage contact). Alarm output (non-voltage contact)
- Wiring length: Indoor/Outdoor operation lines: Total length 1km. Digital signal: 10 m or shorter

- This unit can control up to 4 outdoor units.
- From the centre control device, mode changing and batch operation/batch stop are possible.
- Required for demand control.

Serial Interface for 3rd Party External Controller

Example of 3rd party BMS connection with CZ-CFUNC2
(For the detail please consult to authorised dealer)



Functions via communication adaptor [CZ-CFUNC2]	
A/C unit settings	Unit ON/OFF
	Mode-change
	Room temperature setting
	Fan speed setting
	Flap setting
	Central control setting
	Filter-sign clear
	Alarm reset
A/C unit status	Unit ON/OFF status
	Operation mode
	Setting temperature
	Fan speed status
	Flap status
	Central control setting
	Filter-sign situation
	Alarm code

Communication Adaptor (CZ-CFUNC2)

Up to 128 indoor units can be connected to one Communication Adaptor.

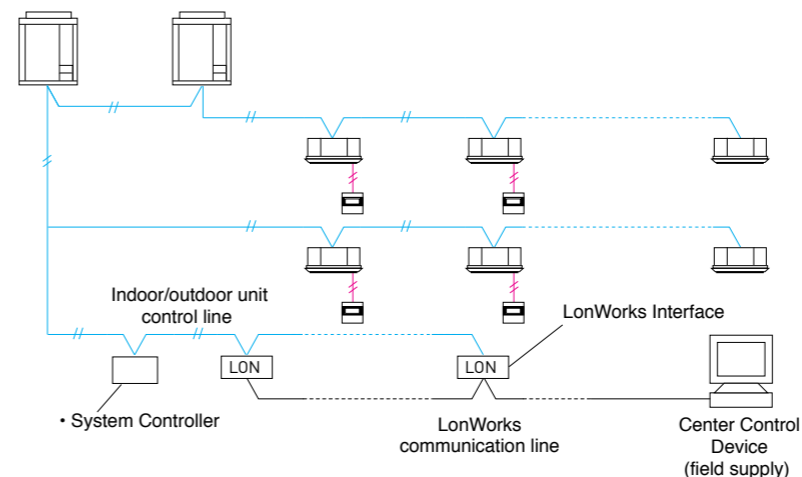
Serial Interface for LonWorks Network

LonWorks Interface (CZ-CLNC2)



- This interface is a communications converter for connecting LonWorks to the control network of FSV.
- From the host connected to LonWorks, basic settings and status monitoring is possible for up to 16 groups of indoor units.

System example



Functions

A/C unit settings from the LonWorks communicator	Settings for each group of indoor units	Start/stop
		Temp. setting
	Settings for all units	Operation mode
		Option 1 settings
		Option 2 settings
A/C unit status notifications made to the LonWorks communicator	Emergency stop	
	Start/stop	
	Temp setting	
	Operation mode	
	Option 1 settings	
	Option 2 settings	
	Alarm status	
	Indoor units with active alarms	
	Room temp.	
	A/C unit status	
Configuration properties	Transmission intervals settings	
	Minimum time secured for transmission	

