

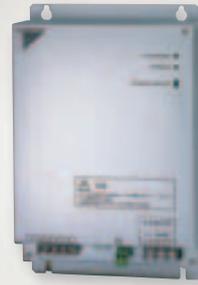


Air Conditioners

Technical Data

LonWorks Interface

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EEDEN10-204

DMS504B51

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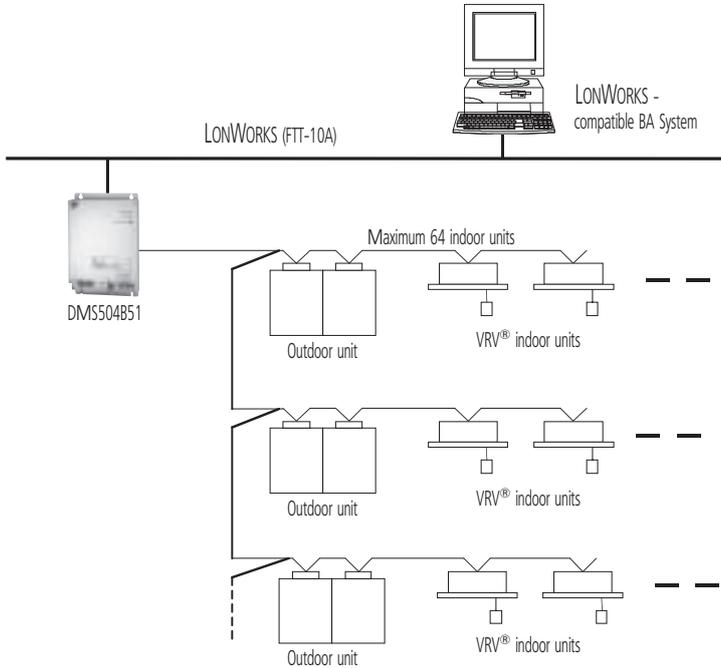
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1 Introduction

This publication represents the specifications relating to the LONWORKS Networks functions and specifications used when Daikin's VRV® or DIII-NET compatible A/C is hooked up to a LONWORKS Networks.

2 System configuration

LONWORKS Networks can be connected to a maximum of 64 groups.



NOTES

- 1 The LONWORKS Networks functions as an interface for a building monitoring system and cannot be co-installed on the DIII-NET along with the following equipment/devices that have similar functions.
 - Master Station II (BACnet Interface for overseas markets)
 - DDS
 - i-Manager for overseas markets
 - Adapter for remote control
 - Parallel interface

3 Quick and easy installation

The open protocol specification gives local system integrators complete design freedom. Also, the ability to combine individual items of equipment into a LONWORKS networks reduces the time and costs required for wiring work

4 Unlimited site size

The new network adapter can be connected to up to 64 groups, depending on the number of control and monitoring functions used :
 $300 > (\text{number of indoor units}) \times (\text{number of SNVT})$

Maximum value is set by the LON BMS manufacturer: in this case 300

Number of connected indoor units: 1 ~ 64.

SNVT: Number of LON network variables

Please consult your Daikin representative for details.

5 Survey of Functions

	Function	Description
Controlling items	ON/OFF Command	Starts/stops air conditioner operation.
	Operation Mode Setting	Sets operation mode (heating/cooling/ventilation/auto).
	Temperature Setting	Sets room temperature.
	Airflow Rate Setting	Sets airflow rate.
	Filter Sign Reset	Resets filter sign.
	Forced Thermostat OFF Setting	Sets forced thermostat OFF.
	Remote ON/OFF Control Rejection	Sets whether permit/prohibit ON/OFF control rejection of the air conditioner with a hand-held remote control.
	Remote Operation Mode Control Rejection	Sets whether permit/prohibit operation mode control rejection of the air conditioner with a hand-held remote control.
	Remote Temperature Setting Control Rejection	Sets whether permit/prohibit room temperature setting control rejection of the air conditioner with a hand-held remote control.
	System Forced OFF Setting	Forcibly stops the air conditioner connected to the DIII-NET /Resets the Forced OFF setting.
	Sub Group Address Control Rejection Setting	Permits/prohibits controlling of the centralized device connected to the DIII-NET.
Monitoring items	ON/OFF Status Report	Monitors ON/OFF status of the air conditioner.
	Operation Mode Status Report	Monitors operation mode status (heating/cooling/ventilation) of the air conditioner.
	Temperature Setting Report	Monitors the set room temperature.
	Room Temperature Report	Monitors the room temperature.
	Airflow Rate Setting Report	Monitors the set airflow rate.
	Filter Sign Report	Checks limit of filter use and monitors if it has reached the limit.
	Error Status Report	Monitors error status of the air conditioners.
	Error Code Report	Displays the manufacturer-specified error codes if any errors occur.
	Thermostat Status Report	Monitors whether the air conditioner's thermostat is working.
	Forced Thermostat OFF Setting Status Report	Monitors the forced thermostat OFF status.
	Remote ON/OFF Operation Rejection Report	Monitors the status if the air conditioner is permitting/prohibiting remote ON/OFF control with a hand-held control.
	Remote Control Operation Mode Setting Rejection Report	Monitors the status if the air conditioner is permitting/prohibiting remote control operation mode with a hand-held control.
	Remote Control Temperature Setting Operation Rejection Report	Monitors the status if the air conditioner is permitting/prohibiting remote control temperature setting with a hand-held control.
	System Forced OFF Setting Report	Monitors the status of the forced OFF setting of the air conditioner connected to the DIII-NET.
	Sub Group Address Control Operation Rejection Setting Report	Monitors the status if the air conditioner is permitting/prohibiting control of a centralized device connected to the DIII-NET.
A/C Communication Status Report	Monitors the communication status (No Occupancy/ Communication normal/ Communication error) of the air conditioner.	

6 Applicable Models

Function	Air Conditioners					
	VRV®	Large Sky Air Multi	Sky Air (Adapter for Sky Air)	Facility A/C (Centralized control adapter)	HRV	RA (General purpose adapter)
ON/OFF operation and monitoring	▲	▲	▲	▲	▲	▲
A/C error report	▲	▲	▲	▲	▲	▲
Room temperature monitoring	▲	▲	▲	▲	×	×
Temperature setting and monitoring					×	×
Operation mode setting and monitoring (Note 3)					×	×
Remote control mode setting and monitoring						×
Filter sign monitoring and reset				×		×
Thermostat status Monitoring				×	×	×
Airflow rate setting and monitoring				×	Only monitoring (Note 2)	×
Forced thermostat OFF setting and monitoring	▲ (Note 1)	▲	▲	×	×	×

NOTES

- 1 When this is set from a remote control, it is not reported to the upper system and, therefore, this setting cannot be monitored by the upper system.
- 2 The triangle (▲) denotes a function that is only available for some models.
- 3 Operation mode can be changed only on indoor units that allow a selection between heating and cooling.

7 Specifications

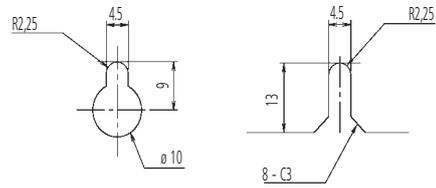
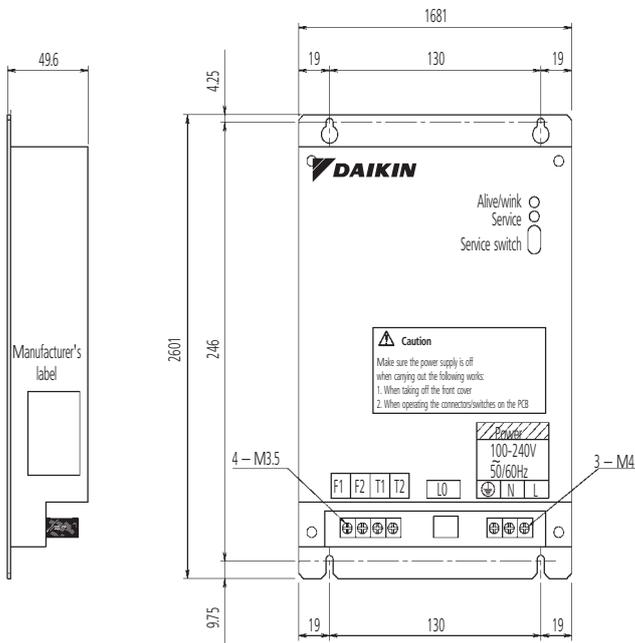
Item	Specifications	
MODEL	DMS504B51	
DIMENSIONS	mm	168 (W) x 260 (H) x 50 (D) mm
WEIGHT	kg	1.5 kg
POWER SUPPLY	Single phase AC100-240V 50/60Hz	
POWER CONSUMPTION	Max. 5W	
OPERATION RANGE	-10 to 50 °C	
STORAGE TEMPERATURE RANGE	-20 to 60 °C	
HUMIDITY	Up to 95% (no condensation)	
PROTOCOL	LonTalk	
TRANSMISSION SPEED	78Kbps	
INSTALLATION	Mounted to indoor distribution board	
TOPOLOGY	FTT-10A (Free topology)	
TRANSMISSION MEDIUM	Twisted pair wire	
CONTACT INPUT	Forced OFF x 1 (A/Cs en bloc)	

8 Accessories

Item	Description	
INTERFACE ADAPTERS	KRP928A2S	For connection to Split units
	DTA102A52	For connection to R-22/R-407C Sky Air units
	DTA112B51	For connection to R-410A Sky Air units

9 Dimensional drawing

DMS504B51



Detailed drawing of fixing hole

NOTES

- 1 Rated electrical conditions:
Rated voltage and frequency: single phase AC100~240V
50/60Hz
Rated power: Maximum 5W
- 2 Conditions
Power Supply fluctuation: $\pm 10\%$ of the rated value
Ambient temperature: $-10 \sim +50^{\circ}\text{C}$
Ambient humidity: 0~95% (Sweating is not acceptable)
Preservation: $-20 \sim +60^{\circ}\text{C}$
- 3 Performance Insulation resistance: $50\text{M}\Omega$ or more by DC500 megohmmeter
- 4 Weight: 1.5 kg

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10 External connection diagram

DMS504B51

Wiring specifications table:

No. ※	Wiring specifications
①	LonWorks Network Communication wiring Use the dedicated line for the LonWorks Network
②	DIII-net wiring <p>Cautions for wiring</p> <ol style="list-style-type: none"> Do not use multicore cables with three or more cores Use wires of sizes between 0.75mm² and 1.25mm² Wire length: MAX 1,000m Do not bind the wire for DIII-net Wirings for DIII-net must be isolated from the power lines. Terminal contact size: M3.5
③	Forced OFF input <p>When forced OFF input is kept on, the indoor units connected to this system are unable to be operated because they are forced off.</p> <ol style="list-style-type: none"> Use a no voltage contact Use a contact which can guarantee minimum application load DC16V and 10 mA Do not use multicore cables with three or more cores Wirings must be isolated from the power lines Terminal contact Size: 3.5

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11 Definition of LED and switch

11 - 1 LED

ALIVE/WINK	CPU normal monitor	Green	Normal	Blinking every 0.4 sec
		Red	WINK command reception	Blinking every 0.2 sec.
SERVICE	LON status	Yellow	Normal	Light off
			Unconfigure state	Blinking every 0.5 sec
			SERVICE SW on	Light on
			Error	Blinking/flashing every 0.84 sec

11 - 2 Switch

SERVICE SW: Neuron ID is sent upon pushing this switch



Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

VRV® products are not within the scope of the Eurovent certification programme.



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