



Instructions for new function

MODELS :

LGH-15RVX3-E

LGH-25RVX3-E

LGH-35RVX3-E

LGH-50RVX3-E

LGH-65RVX3-E

LGH-80RVX3-E

LGH-100RVX3-E

LGH-160RVX3-E

LGH-200RVX3-E

LGH-50RVS-E

LGH-80RVS-E

LGH-100RVS-E

For use by dealer/contractor

Note

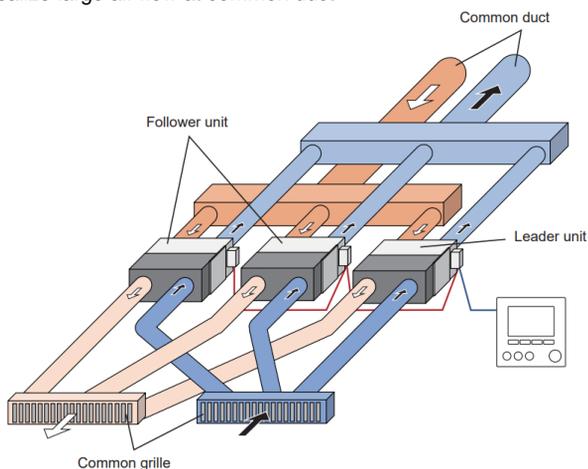
New functions explained in this manual are available for the unit whose product serial No. 24070001 or more.

New functions

- 1** Leader-follower function
- 2** Constant pressure control
- 3** Multiple Lossnay group mixed various series
- 4** Expansion of temperature setting to start pre-heater output (RVX3 only)

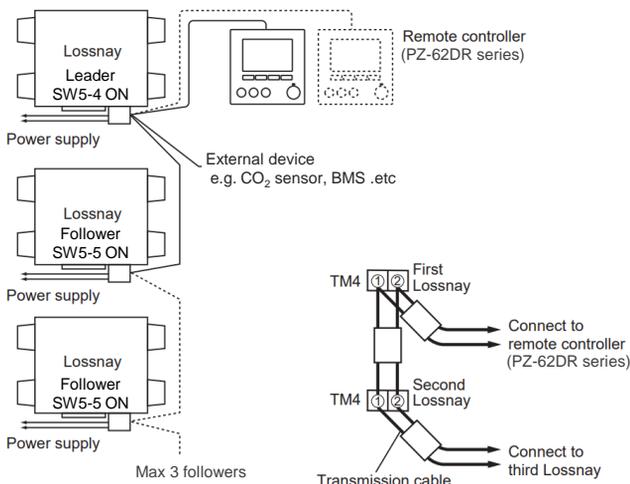
1 Leader-follower function

Follower units synchronize the fan operation, ventilation mode and protective operation to the leader unit. This function is available when multiple Lossnay units are necessary to realize large air flow at common duct



* This picture shows an example RVX3 series. Mind the ducting in case of RVS series.

- Connect leader, follower units and PZ-62DR series via TM4 with transmission cable.
Maximum 3 followers are allowed for one Leader.
Wire type: two-core sheathed cable
Wire diameter: 0.3 mm2
Keep the cable length between lossnay units within 10 m.
- Turn leader unit DIP-SW5-4 "ON" and follower units DIP-SW5-5 "ON"
- When connecting to MELANS, only set the address for the leader and connect it to MELANS. Keep the address setting for the follower as "00". The follower cannot be connected to MELANS.
- When connecting external devices which can control Lossnay or Lossnay output signal, always input to / output from the leader unit. (Only malfunction monitor output signal is available from follower units.)
- For trial operation, DIP-SW2-1 of the leader shall be turned "ON". If SW for follower unit is turned "ON", the follower does not operate. When using this function, approximately 15 sec delay may occur to the start of trial operation.



Note

- Do not tighten screws of terminal block TM4 with a torque larger than 1.2 N·m. It could damage the circuit board.
- Use round terminal for multiple wires connection.
- Solid wire (single-stranded wire) cannot be connected.
- Connect the power supply cable to each Lossnay unit.

CAUTION

- Only same model can use this function. For example, not available between LGH-80RVX3-E and LGH-100RVX3-E, or LGH200RVXT3-E and LGH-200RVX3-E.
- PZ-62DR series is mandatory to use this function. (PZ-43SMF-E cannot be used.)
- When using Leader-follower, the maximum number of Lossnay units that can be connected in one group is four (one Leader unit and three Follower units). It is not possible to mix Lossnay units that do not use Leader-follower within the same group.
- Duct pressure loss of each unit shall be closer.
- Outdoor intake of all units has to be close. If there is a big temperature gap, it may cause core freezing or condensation.
- When one unit in a leader-follower group has an error, all units stop even other units are normal.
- Do not install pre-heater and after-heater for individual duct for each unit. Otherwise it could cause fire or malfunction.
- Connect all units in Leader-follower group to same circuit breaker.
- This function should be set while the power is NOT supplied to the unit. If setting is done during the unit is supplied the power, be sure to reboot the unit.
- Theoretically, when several fans which operate at same load are combined in parallel, air flow rate will be added up as many and static pressure will be unchanged from one fan operation. But, in the actual installation, due to by pressure loss at the junction point and asymmetry ducting of each unit etc. drift, vortex or turbulence flow will happens. Then, air flow specification of the total unit would be different from theory.
- If communication is lost between the leader unit and follower units due to transmission line disconnection or other issues, the leader unit will not be able to detect abnormalities in the follower units. Please use the malfunction monitor output of the follower units to monitor their status as needed.
- For RVX3 series, this leader-follower function can not be used with Dx-coil unit. If DIP-SW 2-9 is ON, leader-follower function become invalid.

Follower units synchronize the fan operation, ventilation mode and protective operation to the leader unit.

Up to 3 units can follow the leader.

All units have to be same model

DIP-SW		Leader
SW No.	Setting	
SW5-4	OFF (Factory setting)	Leader-follower function is N/A.
	ON	The selected unit becomes a leader. Only one unit can be a leader in a group.

Even there are followers in a group, leader-follower function is not available as long as there is no leader.

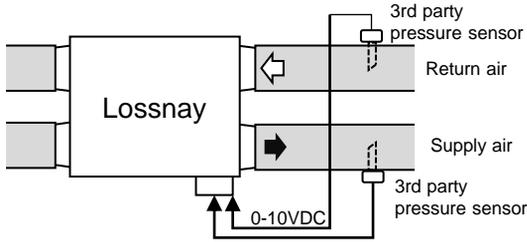
DIP-SW		Follower
SW No.	Setting	
SW5-5	OFF (Factory setting)	Leader-follower function is N/A.
	ON	The selected unit becomes a follower. Up to 3 followers can be set as one leader.

Even there is a leader in a group, leader-follower function is not available as long as there is no followers.

This function is not available from PZ-62DR series.

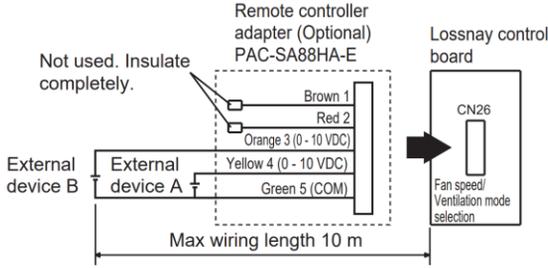
2 Constant pressure control

By this new function, Lossnay tries to keep the input 0-10V voltage from 3rd party pressure sensor constantly by controlling fan speed.



Connection

Establish the wire connection by inserting the optional remote controller adapter (PAC-SA88HA-E) in the connector CN26.



External device A : 3rd party CO₂ sensor / BMS / 3rd party pressure sensor (for return air constant pressure control)

External device B : 3rd party pressure sensor (for supply air constant pressure control) / 3rd party PM2.5 sensor (CN105 communication only)

To change fan speed by 0 - 10 VDC input, the wiring should be as shown by the above picture.

When multiple Lossnay units are controlled by one input, PZ-62DR series is necessary.

Cannot be used in conjunction with the following functions:
- Switching fan speed externally (CN17).

⚠ WARNING

- 0-10 VDC input from the external device to use CN26 shall be insulated from main power supply like 220-240 V. Otherwise it could cause electrical shock or death

⚠ CAUTION

- Make sure of correct polarity.
- Do not apply voltages higher than 10 VDC.

Function setting

No.66 0-10 VDC external input fan control

According to the type of external input, set this item.

Lossnay changes fan speed according to input voltage to CN26 when 3rd party's CO₂ sensor, pressure sensor or BMS is setting.

When connecting with PZ-70CSW-E or PZ-70CSD-E, refer to their manuals for detail.

Do not set other than following settings.

* The function of [CO₂ control: No/Yes] on PZ-62DR series is not applicable for this product. Do not change that setting.

DIP-SW		PZ-62DR series		0-10 VDC external input fan control
SW No.	Setting	Function No.	Setting Data	
5-6 5-7 5-8	-	66	0 (Factory setting)	DIP-SW priority
	5-6 OFF 5-7 OFF 5-8 OFF (Factory setting)		1	No external fan speed control input
	5-6 OFF 5-7 OFF 5-8 ON		2	[Yellow 4 and Green 5 of PAC-SA88HA-E (CN26)] Fan speed control by 3rd party's CO ₂ sensor (0-10 VDC equals to 0-2000 ppm)
	5-6 OFF 5-7 ON 5-8 ON		4	[Yellow 4 and Green 5 of PAC-SA88HA-E (CN26)] BMS control Refer to the following pattern Z
	5-6 ON 5-7 OFF 5-8 OFF		5	PZ-70CSW-E control
	5-6 ON 5-7 ON 5-8 OFF		7	PZ-70CSD-E control
	-		9	[Orange 3 and Green 5 of PAC-SA88HA-E (CN26)] Constant pressure control for the supply air by 3rd party's pressure sensor. Exhaust fan operates as same fan speed as supply fan in this setting.
	-		10	[Orange 3 and Green 5 of PAC-SA88HA-E (CN26)] Constant pressure control for the supply air by 3rd party's pressure sensor. [Yellow 4 and Green 5 of PAC-SA88HA-E (CN26)] Constant pressure control for the return air by 3rd party's pressure sensor.
-	11	[Orange 3 and Green 5 of PAC-SA88HA-E (CN26)] Constant pressure control for the supply air by 3rd party's pressure sensor. [Yellow 4 and Green 5 of PAC-SA88HA-E (CN26)] Displaying CO ₂ concentration on PZ-70CSD-E. (No Fan speed control) Constant pressure control has a priority. Exhaust air operates as same fan speed as supply fan in this setting.		
-	12	[Orange 3 and Green 5 of PAC-SA88HA-E (CN26)] Measure the PM2.5 concentration by 3rd party's PM2.5 sensor. (0-10 VDC equals to 0-1000 µg/m ³) PM2.5 level is communicated via CN105. PM2.5 level is not displayed on PZ-62DR series. (No Fan speed control)		
-	13	[Orange 3 and Green 5 of PAC-SA88HA-E (CN26)] Measure the PM2.5 concentration by 3rd party's PM2.5 sensor. (0-10 VDC equals to 0-1000 µg/m ³) [Yellow 4 and Green 5 of PAC-SA88HA-E (CN26)] Fan speed control by 3rd party's CO ₂ sensor. (0-10 VDC equals to 0-2000 ppm) PM2.5 level is communicated via CN105. PM2.5 level is not displayed on PZ-62DR series.		
-	14	[Orange 3 and Green 5 of PAC-SA88HA-E (CN26)] Measure the PM2.5 concentration by 3rd party's PM2.5 sensor. (0-10 VDC equals to 0-1000 µg/m ³) [Yellow 4 and Green 5 of PAC-SA88HA-E (CN26)] Fan speed control by PZ-70CSW-E. PM2.5 level is communicated via CN105. PM2.5 level is not displayed on PZ-62DR series.		
-	15	[Orange 3 and Green 5 of PAC-SA88HA-E (CN26)] Measure the PM2.5 concentration by 3rd party's PM2.5 sensor. (0-10 VDC equals to 0-1000 µg/m ³) [Yellow 4 and Green 5 of PAC-SA88HA-E (CN26)] Fan speed control by PZ-70CSD-E. PM2.5 level is communicated via CN105. PM2.5 level is not displayed on PZ-62DR series.		

[Pattern Z]

Lossnay changes fan speed as the table below. (Connection example: BMS (Building Management System))

Input voltage[VDC]	Fan speed	Fan speed changing from Remote controller
0 - 1.0	-	Available
1.5 - 2.5	1	N/A
3.5 - 4.5	2	N/A
5.5 - 7	3	N/A
8.5 - 10	4	N/A

When the input voltage is in-between, it will cause unstable operation.

«Constant pressure control»

This function is available when connecting pressure sensor in supply duct or both supply and return duct.

PZ-62DR series is mandatory for this function.

- Select a sensor which can output 0-10 VDC and it equals to 0-500 Pa. Set the requiring pressure (voltage) according to function **No. 48** , **No. 49** , **No. 50** and **No. 51** .
- Constant pressure control becomes ON when “Auto” fan speed is selected.
- The unit changes fan speed according to the gap between current pressure level and requiring level. The unit can operate 5 % air flow pitches, then sometimes, it may fluctuate up and down according to the condition, and it may not achieve the target pressure exactly. When the fluctuation is annoying, change the control interval according to function **No. 47** .
- It is not possible to connecting pressure sensor only to the return duct.
- In constant pressure control, it is not possible to control Lossnay in a group collectively. Please connect a pressure sensor to each Lossnay in the group and perform the function setting. Set function **No. 34** to “Individual control priority”

CAUTION

- It takes a few minutes to get close to the target pressure.
- When air flow is too big or too small in this mode, check the pressure sensor.

No.47 Constant pressure control setting 1) Air flow changing interval

This function is available when constant pressure control is used. It is possible to change the frequency of the adjustment. This function is N/A from Lossnay unit DIP-SW.

DIP-SW		PZ-62DR series		Air flow changing interval
SW No.	Setting	Function No.	Setting Data	
N/A	-	47	0	1 minute
	-		1	3 minutes
	-		2	5 minutes
	-		(Factory setting)	
	-		3	7 minutes
	-		4	10 minutes
	-		5	15 minutes
-	6	30 minutes		

When Leader-follower function is used simultaneously, this setting shall not to be set shorter than factory setting.

No.48-51 Constant pressure control setting 2) – 5) Target voltage

This function is available when constant pressure control is used. Refer to **No. 66** for constant pressure control.

It is possible to change the target voltage according to required pressure.

Pressure sensor which can output 0-10 VDC which is equal to 0-500 Pa has to be used.

No. 48 and **No. 49** is for supply air setting.

No. 50 and **No. 51** is for return air setting.

These functions are N/A from Lossnay unit DIP-SW.

DIP-SW		PZ-62DR series		Target voltage integer for SA - Ones digit
SW No.	Setting	Function No.	Setting Data	
N/A	-	48	0	0.0 V
	-		1	1.0 V
	-		2	2.0 V
	-		3	3.0 V
	-		4	4.0 V
	-		5	5.0 V
	-		6	6.0 V
	-		7	7.0 V
	-		8	8.0 V
	-		9	9.0 V
	-		10	(Factory setting)

DIP-SW		PZ-62DR series		Target voltage integer for SA - Ones decimal place
SW No.	Setting	Function No.	Setting Data	
N/A	-	49	0	0.0 V
	-		(Factory setting)	
	-		1	0.1 V
	-		2	0.2 V
	-		3	0.3 V
	-		4	0.4 V
	-		5	0.5 V
	-		6	0.6 V
	-		7	0.7 V
	-		8	0.8 V
-	9	0.9 V		

For example, **No. 48** is set 7 and **No. 49** is set 5, the target voltage becomes 7.5 VDC.

It is equal to 375 Pa for 0-500 Pa = 0-10 VDC sensor. (500 Pa ÷ 10.0 VDC × 7.5 VDC = 375 Pa)

When only SA constant pressure control is enabled, EA fan operates same fan speed with SA fan.

DIP-SW		PZ-62DR series		Target voltage integer for RA - Ones digit
SW No.	Setting	Function No.	Setting Data	
N/A	-	50	0	0.0 V
	-		1	1.0 V
	-		2	2.0 V
	-		3	3.0 V
	-		4	4.0 V
	-		5	5.0 V
	-		6	6.0 V
	-		7	7.0 V
	-		8	8.0 V
	-		9	9.0 V
	-		10	(Factory setting)

DIP-SW		PZ-62DR series		Target voltage integer for RA - Ones decimal place
SW No.	Setting	Function No.	Setting Data	
N/A	-	51	0	0.0 V
	-		(Factory setting)	
	-		1	0.1 V
	-		2	0.2 V
	-		3	0.3 V
	-		4	0.4 V
	-		5	0.5 V
	-		6	0.6 V
	-		7	0.7 V
	-		8	0.8 V
-	9	0.9 V		

RA constant pressure control only is not possible. RA constant pressure control is always accompanied with SA control.

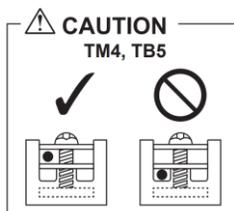
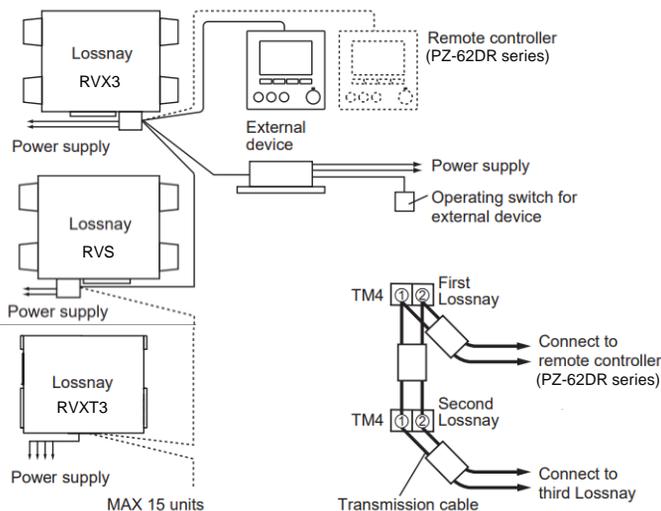
3 Multiple Lossnay group mixed various series

In the case that Lossnay units are RVS, RVX3, RVXT3 series with PZ-62DR series, up to 15 multiple units can be operated at the same time.

(1) Connect the Lossnay unit from Unit 1 to Unit 2, and from Unit 2 to Unit 3 and so on up to a maximum of 15 units using a transmission cable.

Wire type: two-core sheathed cable
Wire diameter: 0.3 mm²

(2) When it is interlocked with an external device, set the Lossnay unit which has external signal input to "Main"



Note

- Do not tighten screws of terminal block TM4 and TB5 with a torque larger than 1.2 N·m. It could damage the circuit board.
- When connecting multiple cables to the terminal, use round terminal.
- Solid wire (single-stranded wire) cannot be connected.
- Only one unit can be set as main Lossnay. The operating signal and pulse signal of the external device can be connected to Main Lossnay only.
- Connect the power supply cable to each Lossnay unit.
- When setting the Lossnay address for use with a Mitsubishi Electric Air-Conditioner Network System (MELANS) etc., the Lossnay with the smallest address in the group will be the Main Lossnay. When not setting the address, set the address to "1" for only one unit in the group. The Lossnay with an address of "1" is the Main Lossnay. (Refer to "Setting the address" on the section 6 for more detail.)
- When multiple type of Lossnay units are in the group, RVS series can NOT be the main unit.
- Without PZ-62DR series, RVS, RVX3 and RVXT3 series can not be mixed in a group.

4 Expansion of temperature setting to start pre-heater output

No.60 Pre-heater output setting 1) ON temperature

Set the outdoor temperature for Pre-heater output ON. When detecting temp. becomes the setting or less, Pre-heater output starts.

This function is N/A from Lossnay unit DIP-SW.

DIP-SW		PZ-62DR series		Outdoor temp. for Preheater output ON
SW No.	Setting	Function No.	Setting Data	
N/A	-	60	0 (Factory setting)	0 °C or less
	-		1	-1 °C or less
	-		2	-2 °C or less
	-		3	-3 °C or less
	-		4	-4 °C or less
	-		5	-5 °C or less
	-		6	-6 °C or less
	-		7	-7 °C or less
	-		8	-8 °C or less
	-		9	-9 °C or less
	-		10	-10 °C or less
	-		11	-11 °C or less
	-		12	-12 °C or less
	-		13	-13 °C or less
	-		14	-14 °C or less
-	15	-15 °C or less		

-8 °C to -15°C become selectable.

Note

- This setting is Not available for RVS series. RVS series is fixed at "0°C or less".