FR

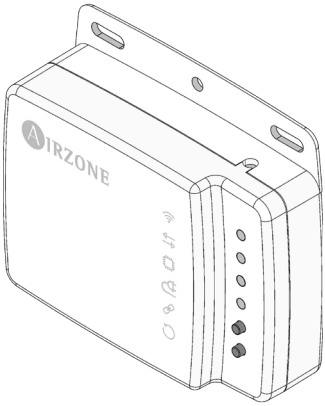
Manuel d'intégration

Aidoo Modbus

Panasonic

Pour PAW-AZAC-MBS-1 et PAW-AZRC-MBS-1

[Pour AZAI6WSCPN0 et AZAI6WSCPN1]



Modbus

AIRZONE

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Precautions et politique environnementale

PRECAUTIONS

Pour votre propre sécurité et celle des dispositifs, veillez à respecter les instructions suivantes :

- Ne pas manipuler le système avec les mains mouillées ou humides.
- Effectuer tous les branchements et débranchements en coupant au préalable l'alimentation du système.
- Des précautions doivent être prises pour éviter les courts-circuits sur toute connexion du système.

POLITIQUE ENVIRONNEMENTALE

Ne jetez pas l'unité dans la poubelle des déchets ménagers. Les appareils électriques et électroniques contiennent des substances qui peuvent être nocives pour l'environnement si ceux-ci ne sont pas traités correctement. Le symbole de la poubelle barrée d'une croix indique une collecte sélective des appareils électriques, différente du reste de déchets urbains. Dans l'intérêt d'une bonne gestion environnementale, ledit appareil devra être déposé dans les centres prévus à cet effet, à la fin de sa durée de vie utile.

Les pièces qui le composent peuvent être recyclées. Veillez, par conséquent, à respecter la réglementation en vigueur en matière de protection de l'environnement.

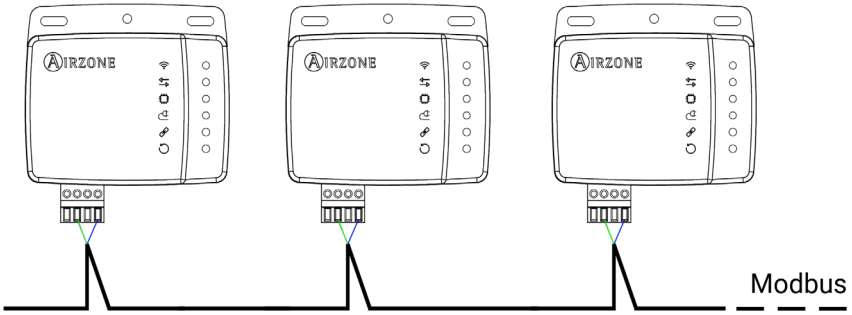
Rendez-vous chez le distributeur, si vous souhaitez remplacer l'appareil par un autre, ou déposez-le dans un centre de collecte spécialisé.
Les transgresseurs s'exposent aux sanctions et aux dispositions prévues par la loi en matière de protection sur l'environnement.

Port de communication RS-485

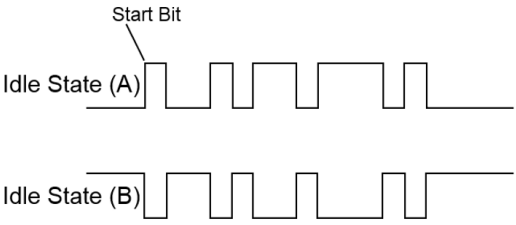
Le RS-485, également appelé EIA-485, est un standard de communication par bus.

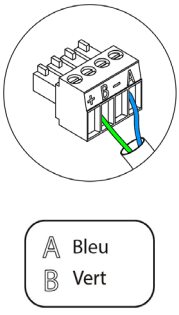
Bus d'intégration	
Vitesse du port de communication	19200 bps
Mode de communication	Half duplex
Longueur de trame	8 bits
Bits d'arrêt	1 bit
Contrôle de flux	Aucun
Parité	Paire

CONNEXION



Afin de veiller au bon fonctionnement des systèmes Airzone, vérifiez que seuls les câbles de communication (vert-bleu) soient connectés à chaque unité terminale des bus domotiques respectifs. À l'aide des vis, fixez les câbles aux différentes bornes, en respectant le code couleur.





Protocole Modbus

Modbus est un protocole de communication basé sur une **architecture maître/esclave**, qui organise l'information au niveau physique en formats ou groupes logique d'information.

Chaque dispositif du réseau Modbus possède une seule et unique adresse. Le dispositif maître émet une commande dans une trame, laquelle contient l'adresse du dispositif ou des dispositifs destinataire(s) (esclaves). Tous les dispositifs reçoivent la trame, mais seule le destinataire interprète et exécute la commande, en retournant un message de confirmation ou d'erreur

.

Note : *Il est possible d'envoyer l'information à de multiples dispositifs de manière simultanée à travers une trame appelée Broadcast.*

Chaque message envoyé comprend des informations redondantes qui assurent son intégrité à la réception. Si, passé un certain délai, le maître ne reçoit pas de confirmation, il l'interprètera comme une erreur et mettra fin à la communication.

Le mode de transmission utilisé est MODBUS-RTU. Chaque octet de données est représenté par deux caractères de 4 bits en hexadécimal. Le format de la trame est le suivant :

Début	0	1	2	3	4	5	6	7	Parité	Fin

CONFIGURATION DE L'ADRESSE ESCLAVE DU DISPOSITIF AIDOO MODBUS PANASONIC

L'Aidoo est un dispositif Modbus esclave. Il est donc nécessaire d'indiquer l'adresse correspondante. À partir d'un maître Modbus, vous pouvez configurer les paramètres suivants :

Registre	Description	Valeurs
56	Modbus address	Modbus slave address (Default 1)
57	Config. Baudrate	0 → 100 bps 1 → 300 bps 2 → 500 bps 3 → 1200 bps 4 → 2400 bps 5 → 4800 bps 6 → 7800 bps 7 → 9600 bps 8 → 19200 bps (Default) 9 → 57600 bps 10 → 115200 bps 11 → 600 bps 12 → 38400 bps 13 → 76800 bps
58	Config. Port parity	0 → None (Default) 1 → Odd 2 → Even

Codes de fonction Modbus

Les commandes basiques de Modbus permettent de contrôler un dispositif pour modifier la valeur de l'un de ses registres (espace dans la mémoire) ou demander le contenu desdits registres ; selon les différents codes de fonction :

Code	Fonction
03	Lecture des registres de sortie ou internes
04	Lecture des registres d'entrée
06	Écriture d'un seul registre
16	Écriture de plusieurs registres

Commandes Modbus

Le format des commandes pour les opérations de lecture/écriture est le suivant (8 octets) :

Adresse de l'esclave	Code d'opération	Adresse de registre	Données	CRC
1 byte	1 byte	1 byte	1...2·N bytes	2 bytes

- **Adresse de l'esclave :** Définit le système auquel on souhaite accéder. Les adresses vont de 1 à 247, le 0 étant l'adresse réservée pour transmettre à tous les dispositifs (Broadcast).
- **Code d'opération :** Indique la fonction que doit réaliser la commande.
- **Adresse de registre :** Indique l'adresse de registre à laquelle on souhaite accéder. Dans le cas des commandes sur plusieurs registres, elle définit le registre de départ à partir duquel les opérations vont s'exécuter de manière consécutive.
- **Données :** Formé par 2 octets (opérations simples) ou par un ensemble de 2 octets (opérations multiples) qui contiennent l'information de la commande.
- **CRC :** 2 octets sont ajoutés en fin de trame afin de détecter les erreurs dans la transmission ou la réception. Pour ce faire, on utilise la méthode de contrôle de redondance cyclique (Cyclic Redundant Code).

  Le polynôme générateur est : **CRC-16 = $x^{16} + x^{15} + x^2 + 1$**.

COMMANDES D'ECRITURE

Écriture d'un seul registre

Octet	Champ
0	Adresse du système (1 - 247) (0 : Broadcast)
1	Écriture d'un seul registre (6)
2	Adresse de registre
3	
4	Données à écrire
5	
6	CRC
7	

La réponse doit avoir toujours exactement le même format que la commande d'écriture, à condition qu'il ne se produise aucun type d'erreur.

Écriture de plusieurs registres

Octet	Champ
0	Adresse du système (1 - 247) (0 : Broadcast)
1	Écriture de plusieurs registres (16)
2	Adresse de registre de départ
3	Nombre de registres à écrire (N)
4	
5	Nombre total d'octets d'écriture (2 N)
6	Données à écrire sur le registre 1
7	
...	
5 + 2·N	Données à écrire sur le registre N
6 + 2·N	
7 + 2·N	CRC
8 + 2·N	

À condition qu'il ne se produise aucun type d'erreur, la réponse sera :

Octet	Champ
0	Adresse du système (1 - 247) (0 : Broadcast)
1	Écriture de plusieurs registres (16)
2	Adresse de registre de départ
3	
4	Nombre de registres à écrire (N)
5	
6	CRC
7	

COMMANDES DE LECTURE

Question

Octet	Champ
0	Adresse du système (1 - 247) (0 : Broadcast)
1	Lecture des registres (3/4)
2	Adresse de registre de départ
3	
4	Nombre de registres à lire (N)
5	
6	CRC
7	

Réponse

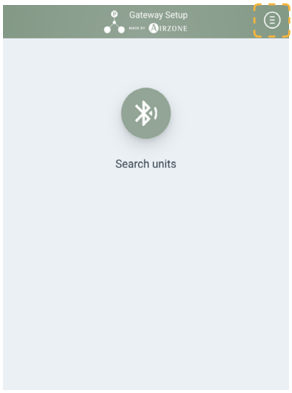
Octet	Champ
0	Adresse du système (1 - 247) (0 : Broadcast)
1	Lecture des registres (3/4)
2	Nombre d'octets de réponse (2 N)
3	Données à lire sur le registre 0
4	
...	
3 + 2·N	Données à lire sur le registre N
4 + 2·N	
5 + 2·N	CRC
6 + 2·N	

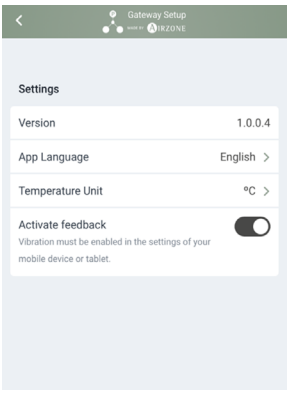
Gateway Setup for Panasonic

CONFIGURATION RÉSEAU

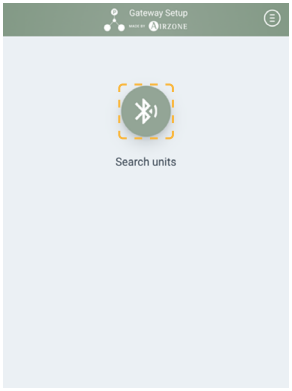
Sur l'écran principal de l'app « Gateway Setup for Panasonic », appuyez sur le bouton *Configuration* pour sélectionner la langue de travail de l'application et les unités de température.

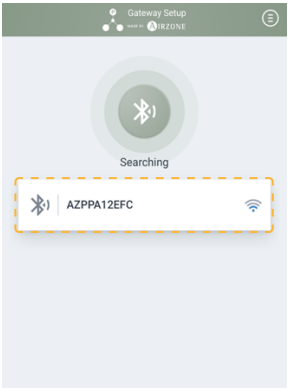
- **Version.** Indique la version de l'application.
- **Langue.** L'App est disponible en 9 langues (allemand, grec, anglais, espagnol, français, italien, polonais, portugais et turc).
- **Unités.** Degrés Celsius (°C) ou Fahrenheit (°F).
- **Feedback activé.** Cette fonctionnalité requiert que le vibreur soit activé sur le dispositif.





De nouveau sur l'écran principal, appuyez sur l'icône *Bluetooth* pour lancer la recherche des dispositifs proches. Sélectionnez votre « Aidoo Modbus Panasonic » pour continuer.

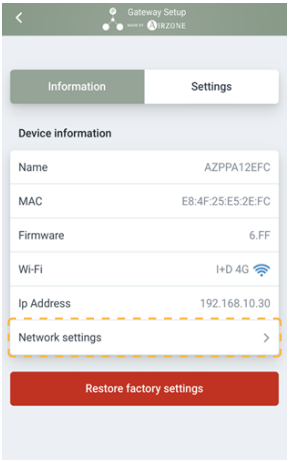




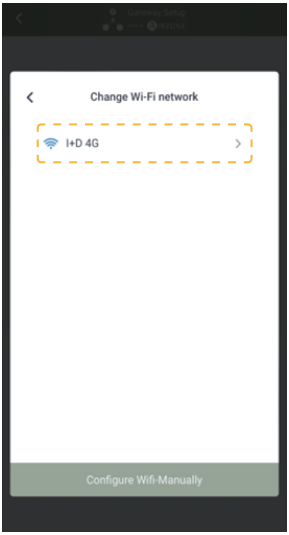
Après sélection du dispositif, le menu d'information s'affiche.

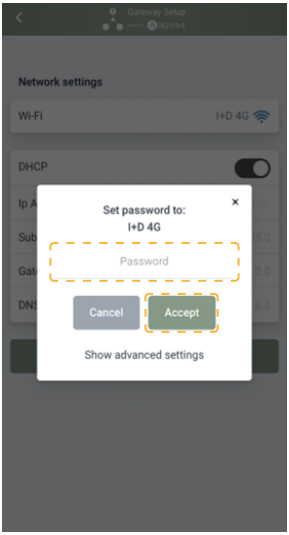
- **Nom.** Nom du dispositif.
- **MAC.** Adresse MAC du dispositif.
- **Firmware.** Indique la version du dispositif.
- **Wi-Fi.** Réseau disponible sur le dispositif.
- **Adresse IP.** Affiche l'IP du dispositif.
- **Configuration réseau.** Permet de configurer le dispositif.

Appuyez sur le bouton *Paramètres d'usine* pour revenir à la configuration initiale.



Si nécessaire, il est possible de changer de réseau Wifi depuis le sous-menu *Configuration réseau*.

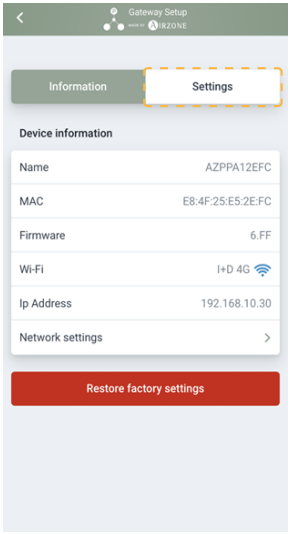


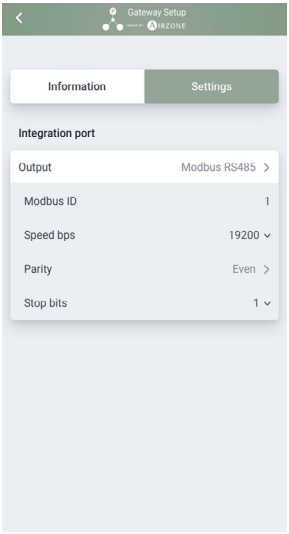


CONFIGURATION MODBUS RS-485

Accédez au menu de configuration pour modifier les paramètres suivantes du dispostif :

- **Modbus ID.** Valeur comprise entre 1 et 255.
- **Vitesse (bps).** 14 vitesses sont disponibles (100, 300, 500, 600, 1200, 2400, 4800, 7800, 9600, 19200 (par défaut), 38400, 57600, 76800 et 115200 bps).
- **Parité.** Aucune, paire ou impaire.
- **Bits d'arrêt.** Valeur à choisir entre 1 et 2.





Téléchargez l'App Gateway Setup for Panasonic

Registres Modbus

AIDOO MODBUS PANASONIC RAC DOMESTIC (PAW-AZAC-MBS-1 [AZAI6WSCPNO])

Registers	Description	Values	Read (R) Write (W)	Operations
0	Unit status On / Off [1]	0 → OFF 1 → ON	R & W	0x03, 0x04, 0x06, 0x10, 0x16
1	Set point [2]	Setpoint x10 Example: 23 °C → 230	R & W	0x03, 0x04, 0x06, 0x10, 0x16
2	Local temperature [3]	Room Temp x10 Example: 23 °C → 230	R	0x03, 0x04
3	Modes	1 → Auto 2 → Cool 3 → Heat 5 → Dry	R & W	0x03, 0x04, 0x06, 0x10, 0x16
5	Louver vertical	0-4 → Louver pos 8 → Auto pos	R & W	0x03, 0x04, 0x06, 0x10, 0x16
7	Unit error code 1 (first part)	Ascii value	R	0x03, 0x04
8	Unit error code 2 (second part)	Ascii value	R	0x03, 0x04
14	Available modes	Bit 0 → Auto Bit 1 → Cool Bit 2 → Heat Bit 4 → Dry	R	0x03, 0x04
15	Available speeds	Bit 0 → Auto Bit 2 → Low Bit 3 → Medium-Low Bit 4 → Medium Bit 5 → Medium-High Bit 6 → High	R	0x03, 0x04
16	Available louvers	Bit 0 → Auto U/D Bit 8-11 → Vertical positions (0-4)	R	0x03, 0x04

(1) *Si le valeur lue est supérieure à 1, le bit moins significatif du registre (Bit 0) sera pris en compte.*
(2) *Les limites minimal / maximal dépendent de votre unité de climatisation.*
(3) *Doit être supérieur à 0.*

Registers	Description	Values	Read (R) Write (W)	Operations
17	Limit temp. max air cool	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
18	Limit temp. min air cool	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
19	Limit temp. max air heat	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
20	Limit temp. min air heat	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
21	Limit temp. max air auto	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
22	Limit temp. min air auto	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
25	Limit temp. max air dry	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
26	Limit temp. min air dry	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
35	Outdoor temp.	Temp x10 Example: 23 °C → 230	R	0x03, 0x04
36	Return temp.	Temp x10 Example: 23 °C → 230	R	0x03, 0x04
45	Consumption	Consumption x10 Example: 7 A → 70	R	0x03, 0x04
53	Work temperature [4]	Temp x10 Example: 23 °C → 230	R	0x03, 0x04
54	Speeds numeric	0 → Auto 1 → Silent 2 → Low 3 → Medium 4 → High 5 → Maximum	R & W	0x03, 0x04, 0x06, 0x10, 0x16
55	Error value	Value of error Example: 0x009	R	0x03, 0x04
56	Modbus address	Modbus slave address (Default 1)	R & W	0x03, 0x04, 0x06, 0x10, 0x16

(4) *Température utilisée par l'unité comme température de travail.*

Registers	Description	Values	Read (R) Write (W)	Operations
57	Config. port baudrate	0 → 100 bps 1 → 300 bps 2 → 500 bps 3 → 1200 bps 4 → 2400 bps 5 → 4800 bps 6 → 7800 bps 7 → 9600 bps 8 → 19200 bps 9 → 57600 bps 10 → 115200 bps 11 →600 bps 12 → 38400 bps 13 → 76800 bps	R & W	0x03, 0x04, 0x06, 0x10, 0x16
58	Config. port parity	0 → None 1 → Odd 2 → Even	R & W	0x03, 0x04, 0x06, 0x10, 0x16
102	Nanoe On / Off	0 → OFF 1 → ON	R & W	0x03, 0x04, 0x06, 0x10, 0x16

AIDOO MODBUS PANASONIC PACI (PAW-AZRC-MBS-1 [AZAI6WSCPN1])

Registers	Description	Values	Read (R) Write (W)	Operations
0	Unit status On / Off [1]	0 → OFF 1 → ON	R & W	0x03, 0x04, 0x06, 0x10, 0x16
1	Set point [2]	Setpoint x10 Example: 23 °C → 230	R & W	0x03, 0x04, 0x06, 0x10, 0x16
2	Local temperature [3]	Room Temp x10 Example: 23 °C → 230	R	0x03, 0x04
3	Modes	1 → Auto 2 → Cool 3 → Heat 4 → Fan 5 → Dry	R & W	0x03, 0x04, 0x06, 0x10, 0x16
5	Louver vertical [4]	0-4 → Louver pos 9 → Swing pos	R & W	0x03, 0x04, 0x06, 0x10, 0x16
7	Unit error code 1 (first part)	Ascii value	R	0x03, 0x04
8	Unit error code 2 (second part)	Ascii value	R	0x03, 0x04
14	Available modes	Bit 0 → Auto Bit 1 → Cool Bit 2 → Heat Bit 3 → Ventilation Bit 4 → Dry	R	0x03, 0x04
15	Available speeds [5]	Bit 0 → Auto Bit 2 → Speed 1 Bit 3 → Speed 2 Bit 4 → Speed 3 Bit 5 → Speed 4* Bit 6 → Speed 5*	R	0x03, 0x04
16	Available louvers [4]	Bit 0 → Auto U/D Bit 8-11 → Vertical positions (0-4)	R	0x03, 0x04

(1) Si le valeur lue est supérieure à 1, le bit moins significatif du registre (Bit 0) sera pris en compte.
(2) Les limites minimal / maximal dépendent de votre unité de climatisation.
(3) Doit être supérieur à 0.
(4) Si « Stop lames » est sélectionné dans l'unité, la position 0 sera représentée dans ce registre, bien qu'en interne l'unité reste en « Stop lames ». Il n'est pas possible d'envoyer un « Stop lames » à l'unité.
*(5) Le nombre de vitesses dépend de votre unité de climatisation. *Les vitesses 4 et 5 peuvent ne pas être disponibles sur tous les modèles.*

Registers	Description	Values	Read (R) Write (W)	Operations
17	Limit temp. max air cool	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
18	Limit temp. min air cool	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
19	Limit temp. max air heat	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
20	Limit temp. min air heat	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
21	Limit temp. max air auto	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
22	Limit temp. min air auto	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
25	Limit temp. max air dry	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
26	Limit temp. min air dry	Limit x10 Example: 23 °C → 230	R	0x03, 0x04
35	Outdoor temp.	Temp x10 Example: 23 °C → 230	R	0x03, 0x04
36	Return temp.	Temp x10 Example: 23 °C → 230	R	0x03, 0x04
45	Consumption	Consumption x10 Example: 7 A → 70	R	0x03, 0x04
53	Work temperature [6]	Temp x10 Example: 23 °C → 230	R	0x03, 0x04
54	Speeds numeric [5]	0 → Auto 1 → Speed 1 2 → Speed 2 3 → Speed 3 4 → Speed 4* 5 → Speed 5*	R & W	0x03, 0x04, 0x06, 0x10, 0x16
55	Error value	Value of error Example: 0x009	R	0x03, 0x04
56	Modbus address	Modbus slave address (Default 1)	R & W	0x03, 0x04, 0x06, 0x10, 0x16

*(5) Le nombre de vitesses dépend de votre unité de climatisation. *Les vitesses 4 et 5 peuvent ne pas être disponibles sur tous les modèles.*
(6) Température utilisée par l'unité comme température de travail.

Registers	Description	Values	Read (R) Write (W)	Operations
57	Config. port baudrate	0 → 100 bps 1 → 300 bps 2 → 500 bps 3 → 1200 bps 4 → 2400 bps 5 → 4800 bps 6 → 7800 bps 7 → 9600 bps 8 → 19200 bps 9 → 57600 bps 10 → 115200 bps 11 → 600 bps 12 → 38400 bps 13 → 76800 bps	R & W	0x03, 0x04, 0x06, 0x10, 0x16
58	Config. port parity	0 → None 1 → Odd 2 → Even	R & W	0x03, 0x04, 0x06, 0x10, 0x16
102	Nanoe On / Off	0 → OFF 1 → ON	R & W	0x03, 0x04, 0x06, 0x10, 0x16
103	Nanoe Error	0 → No 1 → Yes	R	0x03, 0x04

Codes d'erreur

AIDOO MODBUS PANASONIC RAC DOMESTIC (PAW-AZAC-MBS-1 [AZAI6WSCPNO])

Diagnosis display	Abnormality / Protection control	Abnormality judgement	Protection operation	Problem	Check location
H00	No memory of failure	-	Normal operation	-	-
H11	Indoor / Outdoor abnormal communication	After operation for 1 minute	Indoor fan only operation can start by entering into force cooling operation	Indoor / Outdoor communication not establish	· Indoor / Outdoor wire terminal · Indoor / Outdoor PCB · Indoor / Outdoor connection wire
H12	Indoor unit capacity unmatched	90s after power supply	-	Total indoor capability more than maximum limit or less than minimum limit, or number of indoor unit less than two	· Indoor / Outdoor connection wire · Indoor / Outdoor PCB · Specification and combination table in catalogue
H14	Indoor intake air temperature sensor abnormality	Continuous for 5s	-	Indoor intake air temperature sensor open or short circuit	· Indoor intake air temperature sensor lead wire and connector
H15	Compressor temperature sensor abnormality	Continuous for 5s	-	Compressor temperature sensor open or short circuit	· Compressor temperature sensor lead wire and connector
H16	Outdoor current transformer (CT) abnormality	-	-	Current transformer faulty or compressor faulty	· Outdoor PCB faulty or compressor faulty
H19	Indoor fan motor mechanism lock	Continuous happen for 7 times	-	Indoor fan motor lock or feedback abnormal	· Fan motor lead wire and connector · Fan motor lock or block
H23	Indoor heat exchanger temperature sensor abnormality	Continuous for 5s	-	Indoor heat exchanger temperature sensor open or short circuit	· Indoor heat exchanger temperature sensor lead wire and connector
H24	Indoor heat exchanger temperature sensor 2 abnormality	Continuous for 5s	-	Indoor heat exchanger temperature sensor 2 open or short circuit	· Indoor heat exchanger temperature sensor 2 lead wire and connector
H25	Indoor ion device abnormality	Port is ON for 10s during ion device off	-	-	· Ion device PCB
H27	Outdoor air temperature sensor abnormality	Continuous for 5s	-	Outdoor air temperature sensor open or short circuit	· Outdoor air temperature sensor lead wire and connector

Diagnosis display	Abnormality / Protection control	Abnormality judgement	Protection operation	Problem	Check location
H28	Outdoor heat exchanger temperature sensor 1 abnormality	Continuous for 5s	-	Outdoor heat exchanger temperature sensor 1 open or short circuit	· Outdoor heat exchanger temperature sensor 1 lead wire and connector
H30	Outdoor discharge pipe temperature sensor abnormality	Continuous for 5s	-	Outdoor discharge pipe temperature sensor open or short circuit	· Outdoor discharge pipe temperature sensor lead wire and connector
H32	Outdoor heat exchanger temperature sensor 2 abnormality	Continuous for 5s	-	Outdoor heat exchanger temperature sensor 2 open or short circuit	· Outdoor heat exchanger temperature sensor 2 lead wire and connector
H33	Indoor / Outdoor misconnection abnormality	-	-	Indoor and outdoor rated voltage different	· Indoor and outdoor units check
H34	Outdoor heat sink temperature sensor abnormality	Continuous for 2s	-	Outdoor heat sink temperature sensor open or short circuit	· Outdoor heat sink sensor
H36	Outdoor gas pipe temperature sensor abnormality	Continuous for 5s	Heating protection operation only	Outdoor gas pipe temperature sensor open or shot circuit	· Outdoor gas pipe temperature sensor lead wire and connector
H37	Outdoor liquid pipe temperature sensor abnormality	Continuous for 5s	Cooling protection operation only	Outdoor liquid pipe temperature sensor open or shot circuit	· Outdoor liquid pipe temperature sensor lead wire and connector
H38	Indoor / Outdoor mismatch (brand code)	-	-	Brand code not match	· Check indoor unit and outdoor unit
H39	Abnormal indoor operating unit or standby units	3 times happen within 40 minutes	-	Wrong wiring and connection pipe, expansion valve abnormality, indoor heat exchanger sensor open circuit	· Check indoor / outdoor connection wire and connection pipe · Indoor heat exchanger sensor lead wire and connector · Expansion valve and lead wire and connector
H41	Abnormal wiring or piping connection	-	-	Wrong wiring and connecting pipe, expansion valve abnormality	· Check indoor / outdoor connection wire and connection pipe · Expansion valve and lead wire and connector
H59	ECONAVI sensor abnormality	Continuous for 25s	-	ECONAVI sensor open or short circuit	· ECONAVI sensor (defective or disconnected) · ECONAVI PCB
H64	Outdoor high pressure sensor abnormality	Continuous for 1 minute	-	High pressure sensor open circuit durind compressor stop	· High pressure sensor · Lead wire and connector

Diagnosis display	Abnormality / Protection control	Abnormality judgement	Protection operation	Problem	Check location
H67	Nanoe abnormality	Nanoe stop for 5 minutes for 3 times	-	Nanoe faulty	· PCB · Nanoe system · High voltage
H70	Light sensor abnormality	Continuous for 24 hours, 15 days	-	Light sensor open or short circuit	· Light sensor (defective or disconnected)
H85	Abnormal communication between indoor & wireless LAN module	Communication error for 10 minutes for 3 times	-	Wireless LAN LED Off or timer LED blinking	· Network adaptor · Router · Network coverage
H97	Outdoor fan motor mechanism lock	2 times happen within 30 minutes	-	Outdoor fan motor lock or feedback abnormal	· Outdoor fan motor lead wire and connector · Fan motor lock or block
H98	Indoor high pressure protection	-	-	Indoor high pressure protection (Heating)	· Check indoor heat exchanger · Air filter dirty · Air circulation short circuit
H99	Indoor operating unit freeze protection	-	-	Indoor freeze protection (Cooling)	· Check indoor heat exchanger · Air filter dirty · Air circulation short circuit
F11	4-way valve switching abnormality	4 times happen within 30 minutes	-	4-way valve switching abnormal	· 4-way valve · Lead wire and connector
F17	Indoor standby units freezing abnormality	3 times happen within 40 minutes	-	Wrong wiring and connecting pipe, expansion valve leakage, indoor heat exchanger sensor open circuit	· Checker indoor / outdoor connection wire and pipe · Indoor heat exchanger sensor lead wire and conector · Expansion valve lead wire and conenctor
F90	Power factor correction (PFC) circuit protection	4 times happen within 10 minutes	-	Power factor correction circuit abnormal	· Outdoor PCB faulty
F91	Refrigeration cycle abnormality	2 times happen within 20 minutes	-	Refrigeration cycle abnormal	· Insufficient refrigerant or valve close
F93	Compressor abnormal revolution	4 times happen within 20 minutes	-	Compressor abnormal revolution	· Power transistor module faulty or compressor lock
F94	Compressor discharge overshoot protection	4 times happen within 30 minutes	-	Compressor discharge pressure overshoot	· Check refrigeration system
F95	Outdoor cooling high pressure protection	4 times happen within 20 minutes	-	Cooling high pressure protection	· Check refrigeration system · Outdoor air circuit

Diagnosis display	Abnormality / Protection control	Abnormality judgement	Protection operation	Problem	Check location
F96	Power transistor module overheating protection	4 times happen within 30 minutes	-	Power transistor module overheat	· PCB faulty · Outdoor air circuit (fan motor)
F97	Compressor overheating protection	3 times happen within 30 minutes	-	Compressor overheat	· Insufficient refrigerant
F98	Total running current protection	3 times happen within 20 minutes	-	Total current protection	· Check refrigeration system · Power source or compressor lock
F99	Outdoor direct current (DC) peak detection	Continuous happen for 7 times	-	Power transistor module current protection	· Power transistor module faulty or compressor lock

AIDOO MODBUS PANASONIC PACI (PAW-AZRC-MBS-1 [AZAI6WSCPN1])

Unités ECO G

Diagnosis display	Abnormality / Protection control	Problem
A01	Engine oil pressure error	-
A02	Engine oil error	-
A03	Engine high-revolution error	-
A04	Engine low-revolution error	-
A05	Ignition source error	-
A06	Engine start failure	-
A07	Fuel gas valve error	-
A08	Engine stall	-
A10	Exhaust gas temperature high	-
A12	Throttle	Stepping motor failure
A14	Engine oil pressure switch	-
A15	Start power source output short circuit	-
A16	Starter lock	-
A17	CT error	Starter current detection failure
A19	Low coolant temperature	-
A20	High coolant temperature	-
A21	Coolant level error	-
A22	Coolant pump error	-
A23	Crankshaft angle sensor	-
A24	Camshaft angle sensor error	-
A25	Clutch error	-
A26	Flameout error	-
A27	Catalyst temperature error	-
A30	Low fuel gas pressure error	-
E01	Remote controller receive failure	-
E02	Remote controller transmission failure	-
E03	Indoor unit receive failure from remote controller (central)	-
E04	Indoor unit receive failure from outdoor unit	-
E05	Indoor unit transmission failure to outdoor unit	-
E06	Outdoor unit receive failure from indoor unit	-
E07	Outdoor unit transmission failure to indoor unit	-

Diagnosis display	Abnormality / Protection control	Problem
E08	Duplicated indoor unit address setting	-
E09	Multiple main remote controller units set	-
E11	Indoor unit receive failure from signal outpot board	-
E12	Automatic address setting in progress	-
E13	Indoor unit transmission failure to remote controller	-
E15	Automatic address alarm (too few units)	-
E16	Automatic address alarm (too many units)	-
E18	Group control wiring communication failure	-
E20	No indoor unit in automatic address setting	-
E21	Outdoor main board failure	-
E22	Outdoor main board sensor error	-
E24	Communication failure betweenoutdoor units	-
E26	Inconsistencies in number of outdoor units	-
E31	Communication failure between units	-
F01	Indoor heat exchanger inlet temperature sensor (E1)	-
F02	Water heat exchanger anti-freeze sensor (E2)	-
F03	Water heat exchanger refrigerant outlet temperature sensor (E3)	-
F04	Compressor outlet temperature sensor	-
F06	Outdoor heat exchanger inlet temperature sensor / Outdoor heat exchanger 2 inlet temperature sensor (3WAY only)	-
F08	Outside air temperature sensor	-
F10	Indoor unit intake temperature sensor / Hot and cold water inlet sensor	-
F11	Indoor unit discharge temperature sensor / Hot and cold water outlet sensor	-
F12	Compressor inlet temperature sensor	-
F13	Coolant temperature sensor	-
F16	Compressor inlet / outlet pressure sensor error	-
F17	Hot water outlet temperature sensor	-
F18	Exhaust gas temperature sensor	-
F20	Clutch coil temperature sensor error	-
F21	Clutch coil 2 temperature sensor error	-
F29	Indoor nonvolatile memory (EEPROM) error	-
F31	Outdoor nonvolatile memory (EEPROM) error	-
H07	Compressor oil deplation error	-
L02	Inconsistencise in indoor / outdoor unit models	-
L03	Multiple main units set for group control	-

Diagnosis display	Abnormality / Protection control	Problem
L04	Duplicate system (outdoor unit) address setting	-
L05	Duplicate indoor unit priority setting	-
L06	Duplicate indoor unit priority setting	-
L07	Group control wire present for individual-control indoor unit	-
L08	Indoor unit address not set	-
L09	Indoor unit capacity not set	-
L10	Outdoor unit capacity not set	-
L13	Indoor unit model type seeting failure	-
L15	Defective pairing of indoor units	-
L16	Faulty water heat exchanger unit parallel array addresses	-
L19	Duplicated water heat exhanger unit parallel arrays addresses	-
L21	Gas type setting failure	-
P01	Indoor fan error / Indoor unit fan rpm error	-
P03	High compressor discharge temperautre	-
P04	Refrigerant high-pressure switch operation	-
P05	Power source error	-
P09	Indoor unit ceiling panel connector connection failure	-
P10	Indoor unit float switch operation	-
P11	Indoor unit drain pump error / Water heat exchanger unit anti-icing sensor error	-
P12	Indoor DC fan error	-
P13	Refrigerant circuit error (W MULTI / Models with suction bypass valve (85kW type) / Refrigerant circuit error (3 Way))	-
P15	Complete refrigerant gas depletion	-
P18	Bypass valve error	-
P19	Four-Way valve lock error (no detected 3WAY MULTI)	-
P20	Refrigerant high-pressure error	-
P22	Outdoor unit fan error	-
P23	Water heat exhanger unit interlock error (for only water heat exhanger unit)	-
P26	Clutch connection error	-
P30	Group control's sub unit error	-
P31	Group control error	-

Unités ECOi EX 2 Way

Diagnosis display	Abnormality / Protection control	Problem
E06	Outdoor unit receiving failure from indoor unit	-
E12	Prohibit starting auto address setting	-
E15	Auto address alarm (a small number of indoor units)	-
E16	Auto address alarm (a large number of indoor units)	-
E20	No indoor unit during auto address setting	-
E21	Receiving failure of main system from sub system when link wiring is used for outdoor units	-
E22	Receiving failure of sub system from main system when link wiring is used for outdoor units	-
E24	Receiving failure of relay control unit from outdoor unit(s)	-
E25	Failure of outdoor unit address setting (duplicative)	-
E26	Inconsistencies in number of outdoor units	-
E29	Failure of outdoor unit to receive relay control unit	-
E30	Failure of transferring outdoor unit serial	-
E31	Wiring error between the P.C. board ([L-Pow], [HIC] wire)	-
F04	Compressor 1 discharge temperature sensor abnormal [DISCH1]	-
F05	Compressor 2 discharge temperature sensor abnormal [DISCH2]	-
F06	Outdoor unit heat exchanger 1 gas (inlet) temperature sensor abnormal [EXG1]	-
F07	Outdoor unit heat exchanger 1 liquid (outlet) temperature sensor abnormal [EXL1]	-
F08	Outdoor temperature sensor abnormal [TO]	-
F12	Compressor inlet temperature sensor abnormal [SCT]	-
F14	Supercooling gas temperature sensor abnormal [SCG]	-
F16	High pressure sensor abnormal, high-load [HPS]	-
F17	Low pressure sensor abnormal [LPS]	-
F23	Outdoor unit heat exchanger 2 gas (inlet) temperature sensor abnormal [EXG2]	-
F24	Outdoor unit heat exchanger 2 liquid (outlet) temperature sensor abnormal [EXL2]	-
F31	Outdoor unit nonvolatile memory (EEPROM) error	-
H01	Compressor 1 abnormal current values	Overcurrent
H03	Compressor 1 CT sensor disconnected, short-circuit	-
H05	Compressor 1 discharge temperature sensor disconnected	-
H06	Low pressure abnormal lowering	-
H07	Oil loss - error	-
H08	Oil sensor (connection) error 1	-

Diagnosis display	Abnormality / Protection control	Problem
H11	Compressor 2 abnormal current values	Overcurrent
H13	Compressor 2 CT sensor disconnected, short-circuit	-
H15	Compressor 2 discharge temperature sensor disconnected	-
H21	Compressor 2 HIC alarm	-
H27	Oil sensor (connection) error 2	-
H31	Compressor 1 HIC alarm	-
L04	Outdoor unit address settings duplicated	-
L05	Indoor unit priority duplicated (for priority indoor)	-
L06	Indoor unit priority duplicated (not for priority indoor) and outdoor unit	-
L10	Outdoor unit capacity settings not made	-
L17	Inconsistencies in outdoor unit models	-
L18	4-way valve coil disconnected, line disconnected	-
P03	Compressor 1 discharge temperature error	-
P04	Actuation of high pressure switch	-
P05	Compressor 1 open-phase detection	-
P11	Cooling water freeze	Chiller
P14	Actuation of O2 sensor	-
P15	Compressor 2 open-phase detection	-
P16	Compressor 1 secondary overcurrent	-
P17	Compressor 2 discharge temperature error	-
P19	Compressor 2 start failure	Compressor lock / Compressor wiring open-phase / DCCT failure
P20	High load	Forgot to open valves
P22	Outdoor unit fan1 failure	IPM damage / Overcurrent / Invertor failure / DC fan lock / Hole IC open-phase
P23	Inter lock not cancellation	Chiller
P24	Outdoor unit fan2 failure	IPM damage / Overcurrent / Invertor failure / DC fan lock / Hole IC open-phase
P26	Compressor 2 secondary overcurrent	-
P29	Compressor 1 start failure	Compressor lock / Compressor wiring open-phase / DCCT failure

Unités ECOi EX 3 Way

Diagnosis display	Abnormality / Protection control	Problem
E06	Some indoor units does not respond to outdoor unit	-
E12	Auto address failed to start	-
E15	Fewer indoor units are found in auto addressing than the setting on outdoor PCB	-
E16	More indoor units are found in auto addressing than the setting on outdoor PCB	-
E20	No indoor unit responded in auto addressing	-
E24	No response from sub outdoor unit	-
E25	The outdoor unit address is duplicating	-
E26	The number of responding outdoor units does not match with the setting on the main outdoor unit	-
E29	No response from main outdoor unit	-
E31	Error in communication inside outdoor unit control box	-
F04	Compressor 1 discharge temperature sensor has failure (DISCH1)	-
F05	Compressor 2 discharge temperature sensor has failure (DISCH2)	-
F06	Outdoor unit heat exchanger 1 gas temperature sensor has failure (EXG1)	-
F07	Outdoor unit heat exchanger 1 liquid temperature sensor has failure (EXL1)	-
F08	Outdoor temperature sensor has failure (TO)	-
F12	Compressor inlet temperature sensor has failure (SCT)	-
F14	Subcooling heat exchanger temperature sensor has failure (SCG)	-
F16	High pressure sensor has failure (HPS)	-
F17	Low pressure sensor has failure (LPS)	-
F23	Outdoor unit heat exchanger 2 gas temperature sensor has failure (EXG2)	-
F24	Outdoor unit heat exchanger 2 liquid temperature sensor has failure (EXL2)	-
F31	EEPROM on outdoor unit PCB has failure	-
H01	Compressor 1 primary current is overcurrent	-
H03	Compressor 1 current sensor is disconnected or shorted	-
H05	Compressor 1 discharge temperature sensor is disconnected, shorted or misplaced	-
H06	Low pressure sensor value is too low	-
H07	Compressor or refrigerant circuit has low oil	-
H08	Compressor 1 oil temperature sensor has failure (OIL1)	-
H11	Compressor 2 primary current is overcurrent	-

Diagnosis display	Abnormality / Protection control	Problem
H13	Compressor 2 current sensor is disconnected or shorted	-
H15	Compressor 2 discharge temperature sensor is disconnected, shorted or misplaced	-
H21	Compressor 2 HIC has failure	HIC is overcurrent or overheat / VDC is undervoltag
H27	Compressor 2 oil temperature sensor has failure (OIL2)	-
H31	Compressor 1 HIC has failure	HIC is overcurrent or overheat / VDC is undervoltag
L04	Duplicate system address setting on outdoor units	-
L10	Capacity setting of outdoor unit is not correct	-
L11	Incorrect wiring of remote group control wiring (in case of shared solenoid valve)	-
L17	Model mismatch between outdoor units	-
P03	Compressor 1 discharge temperature is too high	-
P04	High pressure switch is activated	-
P05	Compressor 1 AC power supply has abnormal	-
P11	Cooling water freeze	-
P14	O2 sensor has activated	-
P15	Compressor 2 AC power supply has abnormal	-
P16	Compressor 1 secondary current is overcurrent	-
P17	Compressor 2 discharge temperature is too high	-
P19	Compressor 2 start failure	Compressor 2 is missing phase
P22	Outdoor unit fan motor has failure	-
P25	High pressure is out of compressor operating range	-
P26	Compressor 2 secondary current is overcurrent	-
P27	Low pressure is out of compressor operating range	-
P29	Compressor 1 start failure	Compressor 1 is missing phase

Unités Mini ECOi

Diagnosis display	Abnormality / Protection control	Problem
C17	Indoor unit does not respond to central control equipment	-
E01	Indoor unit does not respond to remote controller	-
E02	Remote controller is having error in sending serial communication signal	-
E03	Remote controller does not respond to indoor unit	-
E04	Oudoor unit does not respond to indoor unit	-
E06	Some indoor units does not respond to outdoor unit	-
E08	Indoor unit address is dupulicating	-
E09	Two or more remote controllers are set as main on R1-R2 link	-
E12	Auto address failed to start	-
E14	Two or more indoor units are set as main, in the group controlled indoor units	-
E15	Fewer indoor units are found in auto addressing than the setting on outdoor PCB	-
E16	More indoor units are found in auto addressing than the setting on outdoor PCB	-
E18	No response from sub indoor to the main indoor unit in group control wiring	-
E20	No indoor unit responded in auto addressing	-
E31	Error in communication inside outdoor unit control box	-
F01	Indoor unit heat exchanger liquid temperature sensor has failure (E1)	-
F02	Indoor unit heat exchanger temperature sensor has failure (E2)	-
F03	Indoor unit heat exchanger gas temperature sensor has failure (E3)	-
F04	Compressor discharge temperature sensor has failure (DISCH)	-
F06	Outdoor unit heat exchanger gas temperature sensor has failure (EXG)	-
F07	Outdoor unit heat exchanger liquid temperature sensor has failure (EXL)	-
F08	Outdoor temperature sensor has failure (TO)	-
F10	Indoor suction air (room) temperature sensor has failure (TA)	-
F11	Indoor discharge air temperature sensor has failure (BL)	-
F12	Compressor inlet temperature sensor has failure (SCT)	-

Diagnosis display	Abnormality / Protection control	Problem
F14	Subcooling heat exchanger temperature sensor has failure (SCG)	-
F16	High pressure sensor has failure (HPS)	-
F17	Low pressure sensor has failure (LPS)	-
F29	EEPROM on indoor unit PCB has failure	-
F31	EEPROM on outdoor unit PCB has failure	-
H01	Compressor primary current is overcurrent	-
H02	PFC is overcurrent or VDC is overvoltage (single phase only)	-
H03	Compressor current sensor is disconnected or shorted	-
H05	Compressor discharge temperature sensor is disconnected, shorted or misplaced (DISCH)	-
H06	Low pressure sensor value is too low	-
H31	Compressor HIC has failure	HIC is overcurrent or overheat. VDC is undervoltage or overvoltage
L01	Indoor unit address setting has error	No main indoor unit in group control
L02	Indoor unit model does not match with the outdoor unit model (multi-split/mini-split)	-
L03	Two or more indoor units are set as main in group control	-
L04	Duplicate system address setting on outdoor units	-
L05	Two or more indoor units are set as priority indoor unit (priority indoor unit)	-
L06	Two or more indoor units are set as priority indoor unit (non-priority indoor unit)	-
L07	Group control wiring is detected for indoor unit set as individual control	-
L08	Indoor unit address is not set	-
L09	Capacity setting of indoor unit is not correct	-
L10	Capacity setting of outdoor unit is not correct	-
L13	Indoor unit model does not match with outdoor unit	-
L17	Model mismatch between outdoor units	-
L18	4-way valve has failure	-
P01	Thermal protector for indoor unit fan motor is activated	-
P03	Compressor discharge temperature is too high	-
P04	High pressure swich is activated	-
P05	AC power supply has abnormal	-
P09	Connection to the panel of indoor unit is not good	-

Diagnosis display	Abnormality / Protection control	Problem
P10	Float switch of drain pan safety is activated	-
P11	Drain pump failure or locked rotor	-
P12	Indoor unit fan inverter protection control is activated	-
P14	O2 sensor has activated	-
P16	Compressor secondary current is overcurrent	-
P20	Too high load in refrigerant circuit	-
P22	Outdoor unit fan motor has failure	-
P29	Compressor start failure	Compressor is missing phase or reverse phase
P31	Other indoor unit in group control has an alarm	-

Unités Big PACi

Diagnosis display	Abnormality / Protection control	Problem
E01	Remote controller reception error	-
E02	Remote controller transmission error	-
E03	Error in indoor unit receiving signal from remote controller (central)	-
E04	Error in indoor unit receiving signal from the outdoor unit	-
E05	Error in indoor unit transmitting signal to the outdoor unit	-
E06	Outdoor unit failed to receive serial communication signals from indoor unit	-
E08	Duplicate indoor unit address settings error	-
E09	More than one remote controller set to main error	-
E12	Automatic address setting start is prohibited while auto-address setting in progress	-
E14	Main unit duplication in simultaneous-operation multi control	Detected outdoor unit
E15	Automatic address alarm	The total capacity of indoor units is too low
E16	Automatic address alarm	The total capacity of indoor units is too high or the total number of indoor units is too many
E18	Faulty communication in group control wiring	-
E20	Connection problem of indoor/outdoor units	-
F04	Compressor discharge temperature sensor (TD) trouble	-
F06	Inlet temperature sensor (C1) in heat exchanger trouble	-
F07	Intermediate temperature sensor (C2) in heat exchanger trouble	-
F08	Outdoor air temperature sensor (TO) trouble	-
F12	Compressor inlet suction temperature sensor (TS) trouble	-
F31	Outdoor unit nonvolatile memory (EEPROM) trouble	-
H01	Primary (input) overcurrent detected	-
H02	PAM trouble	-
H03	Primary current CT sensor (current sensor) failure	-
H31	HIC trouble	-
L04	Outdoor unit address duplication	-
L10	Outdoor unit capacity not set or invalid	-
L13	Indoor unit type setting error	-
L18	4-way valve operation failure	-
P03	Compressor discharge temperature trouble	-

Diagnosis display	Abnormality / Protection control	Problem
P04	High pressure trouble	-
P05	AC power supply trouble	-
P13	Alarm valve open	-
P14	O2 sensor detect	-
P15	Insufficient gas level detected	-
P16	Compressor overcurrent trouble	-
P22	Outdoor unit fan motor trouble	-
P29	Lack of INV compressor wiring, INV compressor actuation failure (including locked), DCCT failure	-
P31	Group control error	-

Unités PACi NX

Diagnosis display	Abnormality / Protection control	Abnormality judgement	Protection operation	Problem	Check location
E04	Indoor / Outdoor abnormal communication	After operation for 1 minute	Indoor fan only operation can start by entering into force cooling operation	Indoor / Outdoor communication not establish	· Indoor / Outdoor wire terminal · Indoor / Outdoor PCB · Indoor / Outdoor connection wire
F04	Compressor temperature sensor abnormality	Continuous for 5s	-	Compressor temperature sensor open or short circuit	· Compressor temperature sensor lead wire and connector
F06	Outdoor heat exchanger temperature sensor 1 abnormality	Continuous for 5s	-	Outdoor heat exchanger temperature sensor 1 open or short circuit	· Outdoor heat exchanger temperature sensor 1 lead wire and connector
F08	Outdoor air temperature sensor abnormality	Continuous for 5s	-	Outdoor air temperature sensor open or short circuit	· Outdoor air temperature sensor lead wire and connector
H01	Indoor high pressure protection	-	-	Indoor high pressure protection (Heating)	· Check indoor heat exchanger · Air filter dirty · Air circulation short circuit
H02	Power factor correction (PFC) circuit protection	4 times happen within 20 minutes	-	Power factor correction circuit abnormal	· Outdoor PCB faulty
H03	Outdoor current transformer (CT) abnormality	-	-	Current transformer faulty or compressor faulty	· Outdoor PCB faulty or compressor faulty
L18	4-way valve switching abnormality	4 times happen within 30 minutes	-	4-way valve switching abnormal	· 4-way valve · Lead wire and connector
P03	Compressor overheating protection	4 times happen within 20 minutes	-	Compressor overheat	· Insufficient refrigerant
P04	Outdoor cooling high pressure protection	4 times happen within 20 minutes	-	Cooling high pressure protection	· Check refrigeration system · Outdoor air circuit
P05	Indoor / Outdoor misconnection adnormality	-	-	Indoor and outdoor rated voltage different	· Indoor and outdoor units check

Diagnosis display	Abnormality / Protection control	Abnormality judgement	Protection operation	Problem	Check location
P07	Power transistor module overheating protection	4 times happen within 30 minutes	-	Power transistor module overheat	· PCB faulty · Outdoor air circuit (fan motor)
P15	Refrigeration cycle abnormality	2 times happen within 20 minutes	-	Refrigeration cycle abnormal	· Insufficient refrigerant or valve close
P16	Outdoor direct current (DC) peak detection	Continuous happen for 7 times	-	Power transistor module current protection	· Power transistor module faulty os compressor lock
P22	Outdoor fan motor mechanism lock	2 times happen within 20 minutes	-	Outdoor fan motor lock or feedback abnormal	· Outdoor fan motor lead wire and connector · Fan motor lock or block
P29	Compressor abnormal revolution	4 times happen within 20 minutes	-	Compressor abnormal revolution	· Power transistor module faulty os compressor lock

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