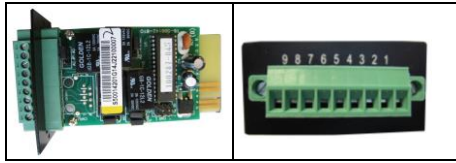# AS-400-S Card Quick Guide

1. Product Outlook

Top View   **Side View**

2. Product Introduction

The AS400-S communication card provides contact closures for remote monitoring your inverter. To meet different application requirements, the AS400-S card is capable of selecting the status of the dry-contact signal (active close or active open) by setting jumper. The suitable applications are listed below:

- IBM Server, Personal PC & Workstations equipments
- Auto-controlled industrial equipment & communication applications

2. Installation

Step 1: Remove cover of Intelligent Slot on the rear panel of the inverter.

**Step 2:** Assemble 9-pin port to AS-400 card and screw it tightly.

Step 3: Insert assembled AS400-S card into Intelligent Slot.

Step 4: The cover of AS400-S should attach close to the panel. Using screwdriver, secure this card to the inverter chassis with 2 screws.

Step 5: Please use wires to connect inverter and equipment to implement the remote monitoring and control.

4. Specifications

Internal circuit
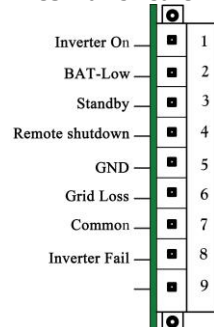
Electric Parameter

Parameter		Symbol	Max.	Unit
Resistor*	DC Current	I_R	6	mA
Diode	Reverse Voltage	V_R	6	V
	Forward Current	I_F	50	mA
	Peak Forward Current	$I_{F\,(Peak)}$	1	A
Relay	DC Voltage	V_{DC}	24	V
	DC Current	I_{DC}	1.0	A

*Note: It's required to keep DC current lower than 6mA. Otherwise, it's necessary to add one resistor within DC current limitation in the serial loop of Remote Shutdown. (e.g. 2K resistor with at least 0.1W rating power). Refer to diagrams in **Application**.

Pin Assignment

Pin Assignment	Function	I/O
Pin 8	Inverter failure	O/P
Pin 6	Grid loss	O/P
Pin 5	GND	I/P
Pin 4	Remote Shutdown (Reserved)	I/P
Pin 7	Common for relays	I/P
Pin 3	Standby	O/P
Pin 2	Low battery	O/P
Pin 1	Inverter On	O/P

Function Description

Dry connection	Unit status	Condition	Dry contact port		Pin connection
Standby	Power off	Unit is totally off.	Open	Close	Pin 3 & Pin 7
	Power on	No output is powered, no charger is working and no power feed-in to grid.	Close	Open	
		Output is powered, charger is working, or power feed-in to grid.	Open	Close	
Inverter On	Power off	Unit is totally off.	Close	Open	Pin 1 & Pin7
	Power on	No output is powered, no charger is working and no power feed-in to grid.	Open	Close	
		Output is powered, charger is working, or power feed-in to grid.	Close	Open	

Dry connection	Unit status	Condition	Dry contact port		Pin connection
Battery low	Power off	Unit is totally off.	Close	Open	Pin 2 & Pin 7
	Power on	Battery voltage is lower than setting cut-off discharging voltage when grid is available.	Open	Close	
		Battery voltage is higher than setting re-discharging voltage when grid is available.	Close	Open	
Grid loss	Power off	Unit is totally off.	Close	Open	Pin 6 & Pin 7
	Power on	Grid is not available.	Open	Close	
		Grid is available.	Close	Open	
Inverter fail	Power off	Unit is totally off.	Close	Open	Pin 7 & Pin 8
	Power on	Working in fault mode.	Open	Close	
		Not working in fault mode.	Close	Open	

Application:

Below shows the circuit of basic application to implement monitoring and control.
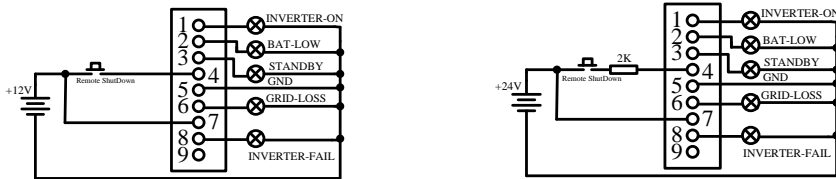
User Interface for 12V   **User Interface for 24V**

5. Internal Logical Connection

IC controller of the card controls actions of 5 relays depending on the inverter status.
Active-Close(A.C) terminal and Active-Open(A.O) terminal of each relay connect to pin 3 and pin 1 of a 3-pin connector respectively. The pin 2 of the 3-pin connector connects to the signal pin of the 9-PIN interface connector. The 2-pin jumper can be plugged to the 3-pin connector to either short-circuit Pin1 & Pin2(A.O) or short-circuit Pin3 & Pin2(A.C).
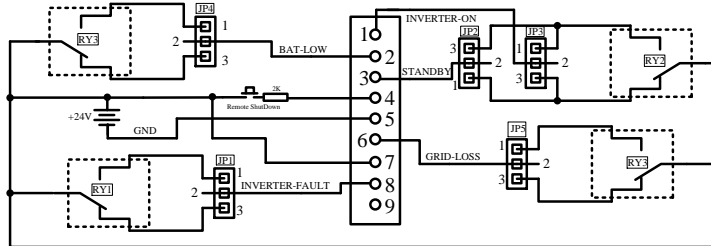

Fig 1   Pin definition and internal logical connection

Accordingly, if pin1 is short circuited with pin2 via the jumper, the status of dry contact signal will be ACTIVE CLOSE, refer to Fig 2. When the signal is active, the signal pin on the 9-PIN connector will connect with the common pin (pin7) via the relay.
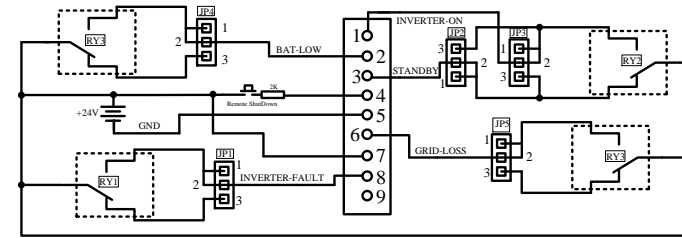

Fig 2   Connection for ACTIVE CLOSE

If Pin3 is short circuited with Pin2(A.O) via the jumper, the status of dry contact signal will be ACTIVE OPEN, refer to Fig 3. When the signal is active, the signal pin on the 9-PIN connector will disconnect with the common pin (pin7) via the relay.
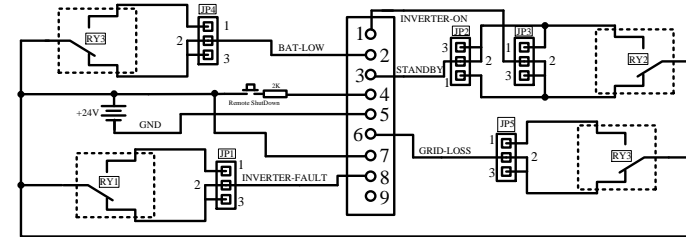

Fig. 3 Connection for ACTIVE OPEN

6 Jumper Set-up

The 3-pin connectors can be easily found just near to the relay. Refer to Fig. 4.

Fig.4   AS400-S card

There are AC and AO white silk printings of the connector as shown in Fig. 5 to indicate pin1&2 in A.O and pin2&3 in A.C.

Fig. 5 AO and AC silk printings indicates each 3-pin connector status

To achieve ACTIVE CLOSE dry-contact signal, the jumper should connect the 2 pins(Pin1&2) as shown in Fig. 6.

Fig. 6 Jumper setting for ACTIVE CLOSE

To achieve ACTIVE OPEN dry-contact signal, the jumper should connect the middle pin and the pin3 as shown in Fig. 7

Fig. 7   Jumper setting for ACTIVE OPEN

Jumper function description

JP	Description	JP	Description
1	Inverter fault	4	Low battery
2	Standby	5	Grid loss
3	Inverter-On		