ARGOX I4/iX4 Series GPIO Interface Control Instruction Manual

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ARGOX I4/iX4 Series GPIO Interface Control

Product Information

Specifications

The GPIO interface is designed for Argox industrial printers and external peripheral devices.

- **Connector:** D-Sub 15-pin female connector
- **Input Pins:** Standard TTL levels
- **Output Pins:** Standard TTL levels, pulled up 1K ohm internally by 5V, maximum sink current 30mA
- **Power Supplies:** 5V (max supply current 500mA), 24V (max supply current 1A)

Connector Pin Specification

- All input pins are defined as standard TTL levels.
- All output pins are defined as standard TTL levels and internally pulled up by 5V with a maximum sink current of 30mA.
- The ground (pin1 and pin8) of the GPIO board and the signal ground of the external device need to connect directly.
- The connecting cable length between the GPIO interface and the external device should be less than 15 feet.

Input/Output Signal Description

There are four input pins for the application:

1. **Start Print (Pin 3):**
    - This signal initiates the print job (active low).
    - When the print job is finished, the End Print pin sends a low pulse (20ms).
    - Data Ready pin goes active low when data is ready for printing.

Product Usage Instructions

- **Installation:**
  Follow the installation guide to connect the GPIO card to the industrial printer.
- **Operation:**
  Program or customize the GPIO interface to control printer functions.
- **Connector Pin Connections:**
  Ensure proper connection of pins based on the provided pin definitions.
- **Cable Length:**
  Keep the cable length between the GPIO interface and the external device under 15 feet to prevent noise and errors.

FAQ

- **Q: What is the maximum sink current for output pins?**
  A: The maximum sink current for output pins is 30mA.
- **Q: How should I handle the Start Print signal?**
  A: The Start Print signal initiates the print job and is active low. Ensure to follow the timing chart for proper operation.

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Specifications

1. The GPIO interface is designed for Argox industrial printers and external peripheral devices.

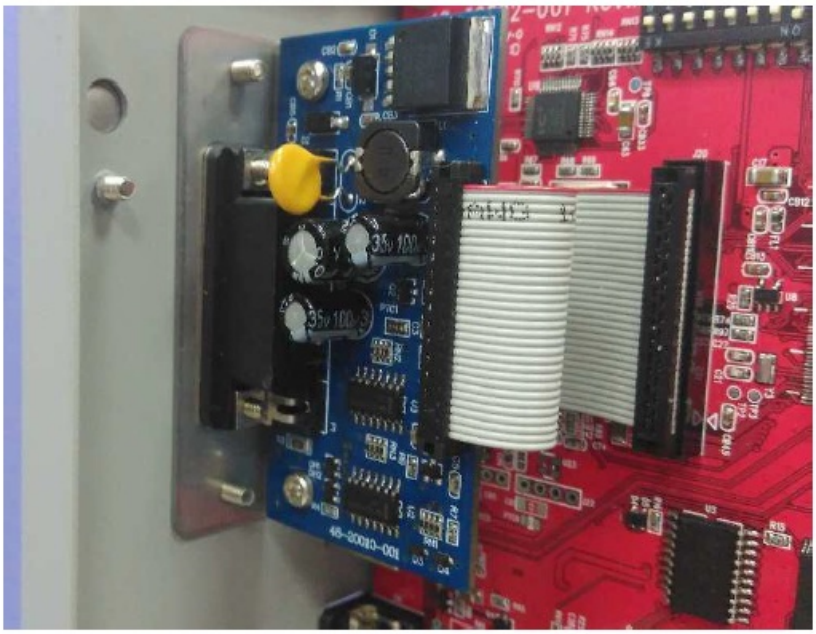
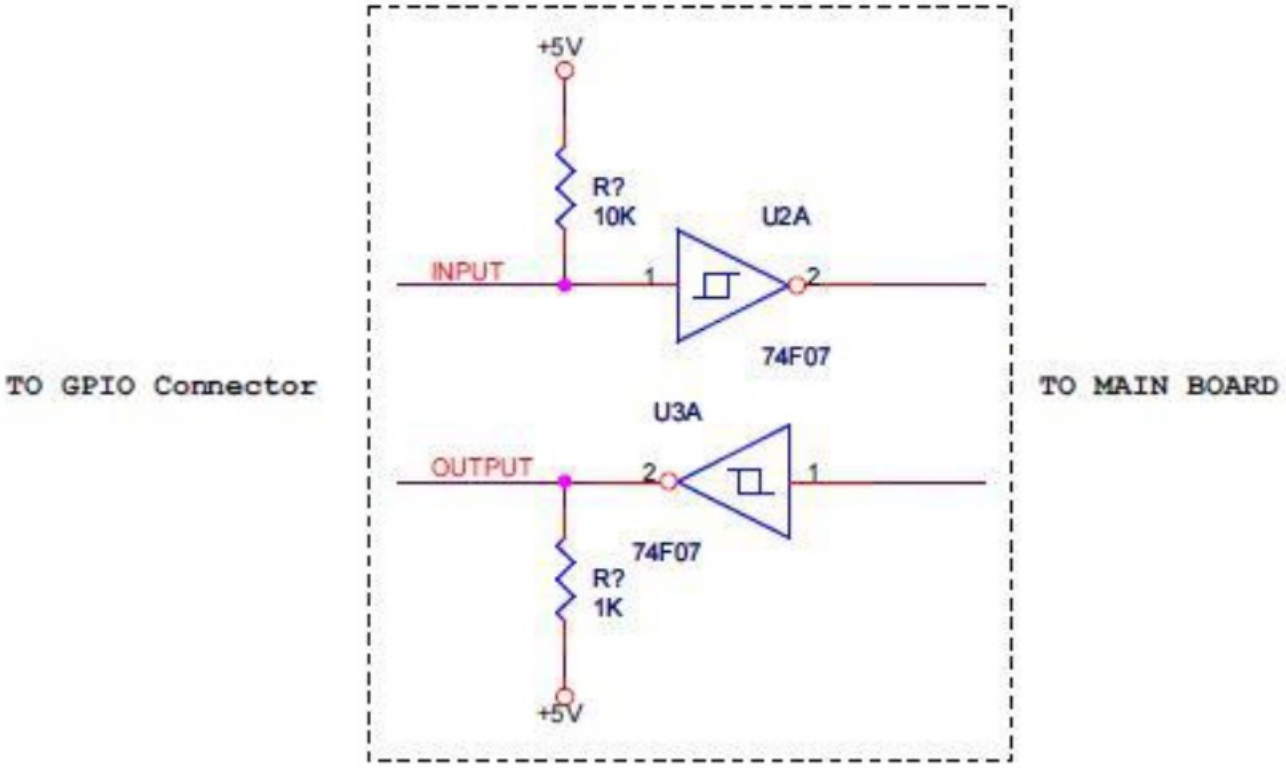


Figure 1 Installation of a GPIO card onto the industrial printer

2. The GPIO interface works in exceptional control by changing input signal levels; it's programmable or customized, and output signals show the printer status or functional indicator.



3. The GPIO interface is as shown in Figure 2 and Figure 3; it uses a D-Sub 15-pin female connector.

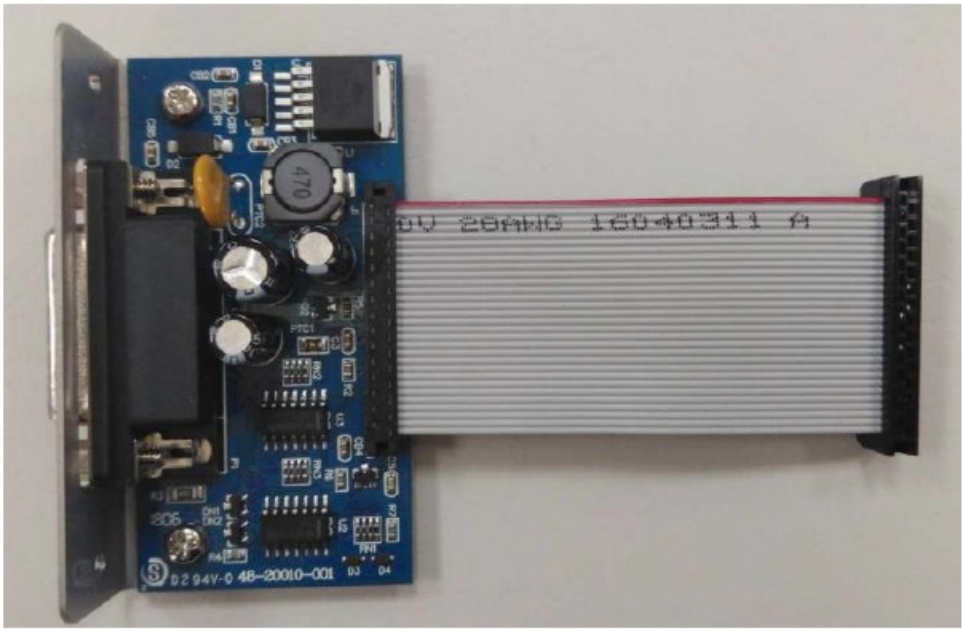


Figure 2 GPIO board

Figure 3

4. Connector pin definitions are as follows:

Pin No.	Type	Default Function	Description
1	P	GND	Power return path of +5V
2	P	+5V	Power plus path of +5V
3	I	Start Print	Start printing. Trigger this signal (high to low) to enable t he printer to print one received format label.
4	I	Feed	Feed. Trigger this signal (from high to low) to feed one la bel. It's the same as the "FEED" key on the panel.
5	I	Pause	Pause. When this signal is triggered (high to low), the pri nter pauses or stops the print job until the next pause sig nal is triggered.

6	I	Reprint	Reprint. The printer reprints the last label when this signal is triggered (high to low).
7	P	24V	Power plus path of +24V
8	P	GND	Power return path of +24V
9	NC	Not Connect	
10	O	Serv_Req	Service required. When a printer error occurs, this output signal will change from high to low (active low).
11	O	End Print	End of print. Output a low pulse signal in 20ms at the en d of printing.
12	O	Media Out	Media out. When the printer runs out of paper or has a p aper jam error, this output signal will change from high to low (active low).
13	O	Ribbon Out	Ribbon out. When the ribbon runs out, this output signal will change from high to low (active low).
14	O	Data Ready	The data is ready. This output signal will change from hig h to low (active low) when printing data is received and w aiting to trigger printing.
15	O	OPT Fault	Output fault. When a printer error occurs, this output sign al will change from high to low (active low).

Type: P for Power; I for Input; O for Output Table 1

Connector pin specification

1. All of the input pins in the table are defined as standard TTL levels.
2. All of the output pins in the table are defined as standard TTL levels; they are pulled up 1K ohm internally by 5V, and the maximum sink current is 30mA.
3. There are two power supplies for external devices; the maximum supply current of 5V is 500mA, and 24V is 1A.
4. Because all of the signals were not isolated, the ground (pin1 and pin8) of the GPIO board and the signal ground of the external device need to connect directly; it should avoid different GND pins connecting the GPIO board and making this board fail.
5. Suggest that the length of the connecting cable between the GPIO interface and the external device should be less than 15 feet to avoid noise and errors.

Input/Output Signal Description

There are four input pins for the application.

1. **Pin 3**

   Start Print:

   - This signal makes the printer start to do the print job; it is active low.
   - When the print job is finished, the output pin of End Print will send a low pulse (20ms), and the external device should turn off the Start Print signal.

- When data to be printed is received, the output pin of Data Ready will active low.
- The timing chart is shown in Figure 4.

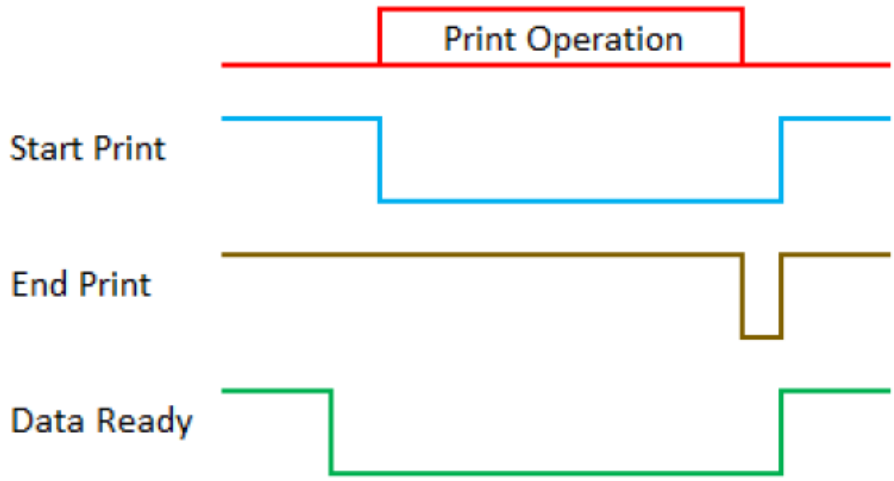


Figure 4

2. **Pin 4**

   Feed:

   - The signal is to let the printer feed the media; the internal label length sets the distance.
   - During feed processing, the output pin of Data Ready will be active and disabled till the end of the feed.
   - The timing chart is shown in Figure 5.

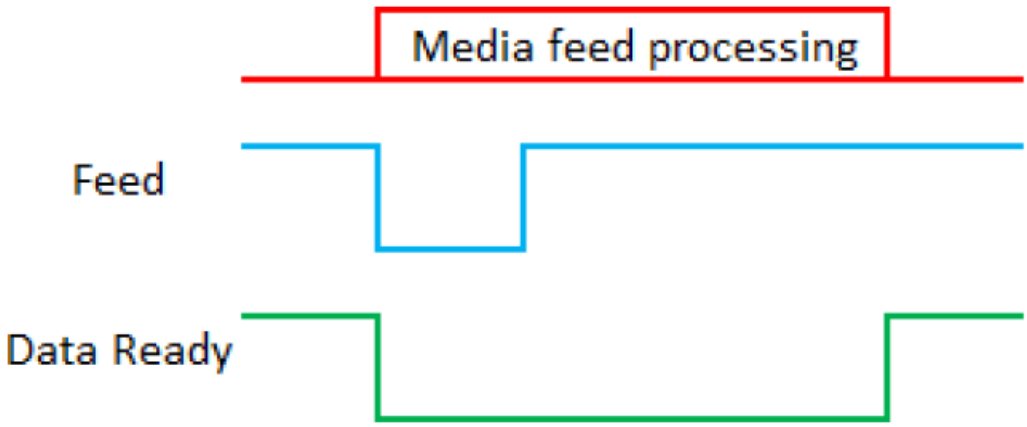


Figure 5

3. **Pin 5**

   Pause:

   - The signal causes the printer to pause action; it is a toggle (on/off) mode when the printer needs to be temporarily stopped.
   - During pause processing, the output pin of OPT Fault will be active low and disabled until the pause signal is active again.
   - The timing chart is shown in Figure 6.

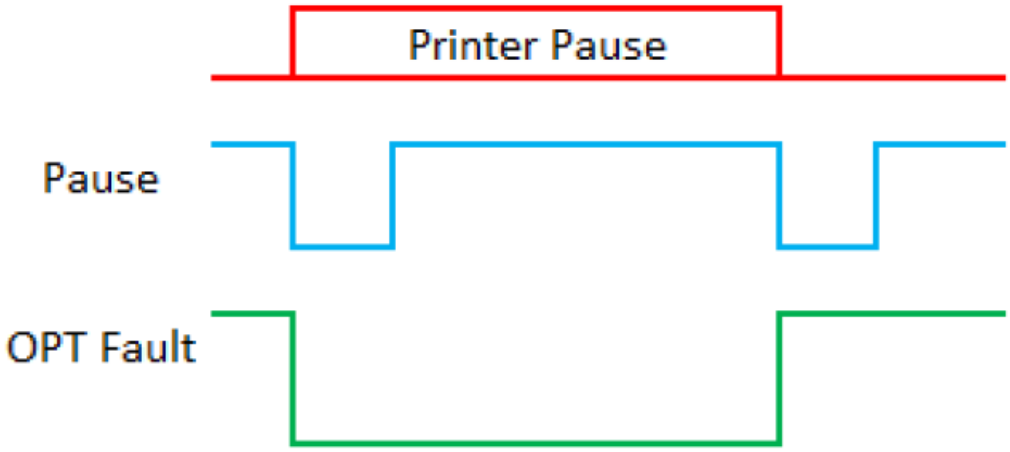


Figure 6

4. **Pin 6**

   Reprint:

   - This signal makes the printer print the last label again; it is active low.
   - When the print job is finished, the output pin of End Print will send a pulse (20ms), and the external device should turn off the Re-Print signal.
   - The output pin of Data Ready will be active and disabled till the end of printing.
   - The timing chart is shown in Figure 7.

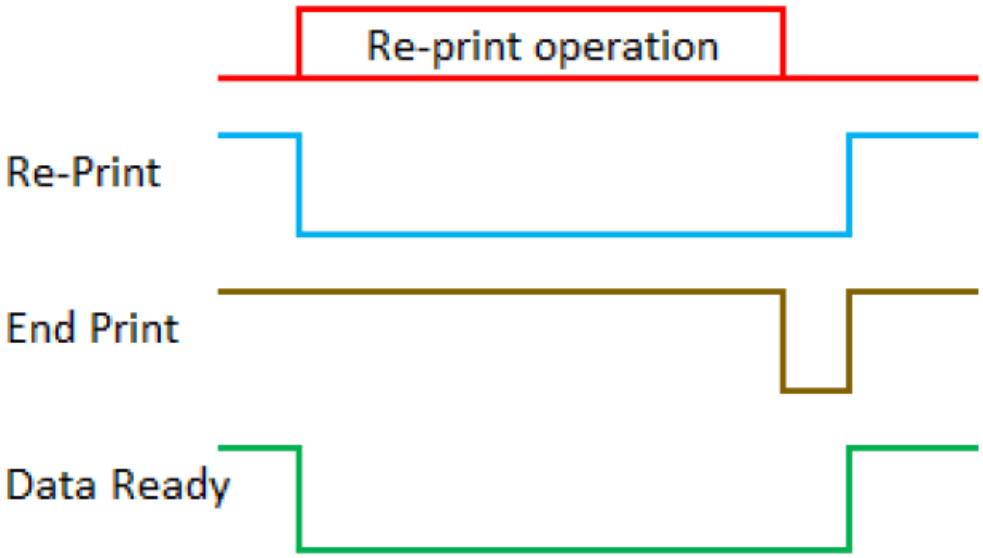


Figure 7

There are six output pins for the printer's application; the timing chart is shown in Figure 8.

1. **Pin 10**

   Serv_Req:

- The signal will be active when a printer error occurs.

2. **Pin 11**

   End Print:

   - It indicates the printer's status and is active when the printing page is complete.
   - The action timing is about 20ms.

3. **Pin 12**

   Media out:

   - It indicates the media status and is active when media (paper) out occurs.
   - This signal persists until the error condition is removed.

4. **Pin 13**

   Ribbon out:

   - It indicates the ribbon status and is active when ribbon out occurs.
   - This signal persists until the error condition is removed.

5. **Pin 14**

   Data Ready:

   - It indicates the printer has received print data.
   - In this state, the printer could accept the input Start Print signal to start the print job.

6. **Pin 15**

   OPT Fault:

   - It indicates all the printer's error status. If it is active, please perform the troubleshooting procedure.
   - This signal persists until the error condition is removed.

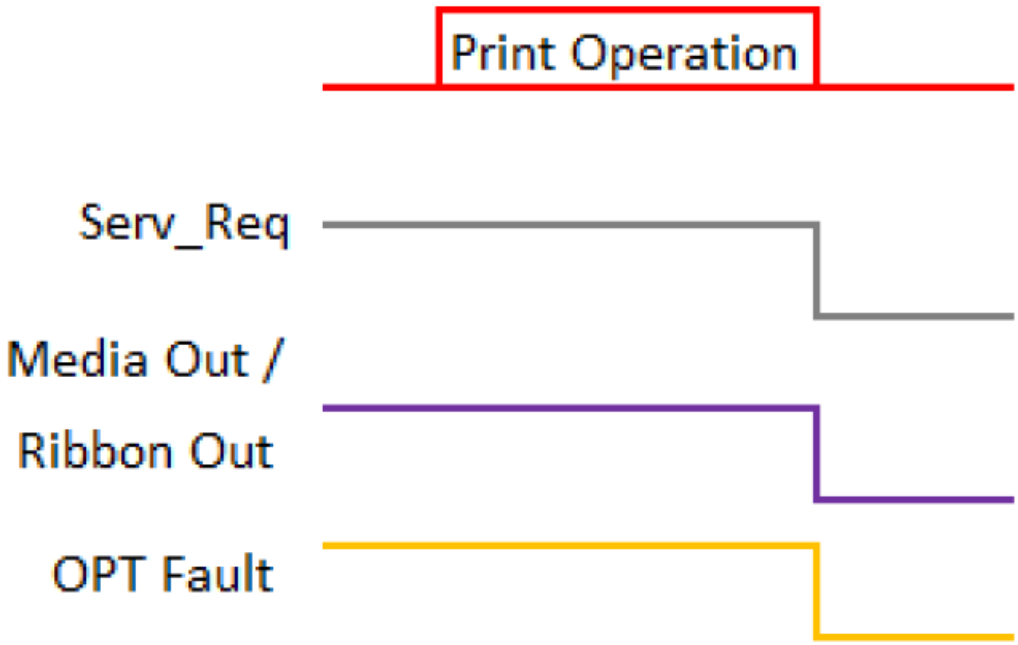


Figure 8

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Documents / Resources

	**ARGOX I4/iX4 Series GPIO Interface Control** [pdf] Instruction Manual I4, iX4 Series, I4 iX4 Series GPIO Interface Control, I4 iX4 Series, GPIO Interface Control, Interface Control, Control

References

- Argox | a Sato Company
- Argox | a Sato Company
- User Manual