Interface Description

I/O Interfaces I/O 5V15-2 and I/O 5V15-3

Edition: 05/2020 · **Part No.** 9003561

Function

The I/O interfaces are designed to connect the printer to a superordinated control.
The interfaces I/O 5V15-2 and I/O 5V15-3 are intended for printers of the PX Q series and already integrated.
I/O 5V15-3 supports beside the I/O functions also the ribbon saver function.

	I/O 5V15-2	I/O 5V15-3
Part No.	6010512	6010515
Operating Voltage	5 V	
External Interface	15 pin SUB-D connector	
Interface to the CPU	USB	
Application	PX Q	
Ribbon Saver Support	no	yes

Table 1 Technical Data

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2 1 Pin Assignment

The interface has a 15 pin SUB-D connector.

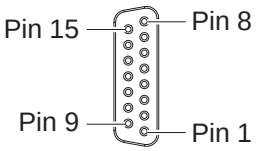


Figure 1 I/O interface

Pin	Signal	Name	Description	Activation / Active State
1	-	GND_EXT	Ground return for +5V power source *5V supply = internal*: Ground return for internal +5V power source is available for remote optocouplers (Default) *5V supply = external*: Ground return for external +5V power source must be connected to supply power to internal optocouplers	
2	-	5P_EXT	Power source +5V *5V supply = internal*: Internal +5V power source is available for internal and remote optocouplers (Default) *5V supply = external*: External +5V power source must be connected to supply power to internal optocouplers	
3	←	STARTPR	Mode Edge : Starts the printout of a single label.	High to Low transition
			Mode Level : Labels are printed as long as the signal is active.	Assert Low
4	←	FEED	Label feed A blank label is forwarded to synchronize the label transport; label feed is proceeded only if no print job is available or an error has occurred	High to Low transition
5	←	PAUSE	Pause To toggle the current PAUSE state	Assert Low for 200 ms
6	←	REPRINT	Mode Edge : The last label will be repeated one time after every activation.	High to Low transition
			Mode Level : The last label will be repeated as long as the signal is active.	Assert Low
			Mode New/Repeat The last label will be repeated when REPRINT is active and STARTPR will be activated additionally	Assert Low + Activation STARTPR
7	-	P24	Internal power source +24V, Si T 500mA for external consumers e.g. sensors, trigger switches	
8	-	GND	Power Ground (0V) for external consumers e.g. sensors, trigger switches	
9	→	RIBBON_LOW	Warning end of ribbon (only when *Setup > Ribbon > Ribbon warning* is active) This signal reports that there is available only a few amount of transfer ribbon.	*Mode RIBBON LOW = active low:* Low *Mode RIBBON LOW = active high:* High
10	→	SRV_REQ	Printer not ready • An error must be corrected. • Label feed is not synchronized. • The printhead is open.	Low
11	→	ENDPRINT	Mode 1 : Labels are fed by the print module	Low
			Mode 2 : Labels are fed by the print module	High
			Mode 3 : (Default) Label has been completed and positioned in peel position in peel-off mode only	Low pulse of 20 ms
			Mode 4 : Label has been completed and positioned in peel position in peel-off mode only	High pulse of 20 ms

1 Pin Assignment

Pin	Signal	Name	Description	Activation / Active State
12		MEDIA_OUT	Error “Out of paper” There are no (more) labels in the print module.	Low
13		RIBBON_OUT	Error “Out of ribbon” There is no (more) transfer ribbon in the print module.	Low
14		DATA_RDY	Print job available Print jobs are stored in the print module. in PAUSE state the signal if inactive	Low
15		JOBDEL	Cancel print job The current print job is cancelled and deleted from the print buffer.	Low pulse of 20 ms

Table 2 Pin assignment of the I/O interface

2 Configuration

▶ Start menu.

Select *Setup* > *Interfaces* > *I/O*.

Parameter		Meaning	Default
	START mode	Configuration of the STARTPR signal *Edge:* Starts the printout of a single label. *Level:* Labels are printed as long as the signal is active.	*Edge*
	REPRINT mode	Configuration of the REPRINT signal *Edge:* The last label will be repeated one time after every activation. *Level:* The last label will be repeated as long as the signal is active. *START/REPRINT select*: The last label will be repeated when REPRINT is active and STARTPR will be activated additionally	*Edge*
	JOBDEL mode	Configuration of the I/O signal JOBDEL *Cancel print job:* The current print job is canceled and deleted from the print buffer. *Cancel all:* All jobs in buffer are canceled.	*Cancel print job*
	Start delay	Delay (max. 2,5 s) between start signal and the start of an labelling cycle.	*0 ms*
	Lock time	All start signals coming in following the first start signal are ignored when they arrive within the lock time (max. 2,5 s).	*0 ms*
	Mode END PRINT	Selection of the ENDPRINT mode	*Mode 3*
	Mode RIBBON LOW	Polarity of the RIBBON_LOW signal	*active low*
	5V supply	*5V supply = internal*: Internal +5V power source is available for internal and remote optocouplers (Default) *5V supply = external*: External +5V power source must be connected to supply power to internal optocouplers	*internal*

Table 3 Parameters of the *Setup* > *Interfaces* > *I/O* menu

4 3 Circuit Diagram of Inputs and Outputs

The **inputs** are optocouplers with a current limiting resistor of 330 Ω in the input circuit. All input have the common connector for a +5V power source.

All **outputs** are realized through solid state relays which outputs are connected with one another one-sided. The joint line is connected to the ground return of a +5V power supply.

The switch function of the outputs is to open or close the contact between the joint line and the respective output.

Electrical requirements : U_{max} = 5 V I_{max} = 20 mA

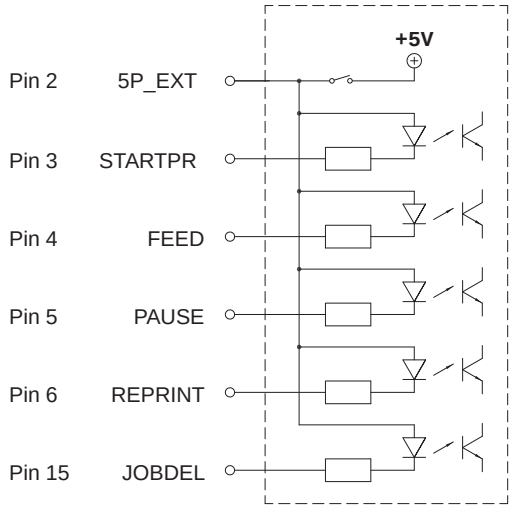


Figure 2 Circuit of the inputs

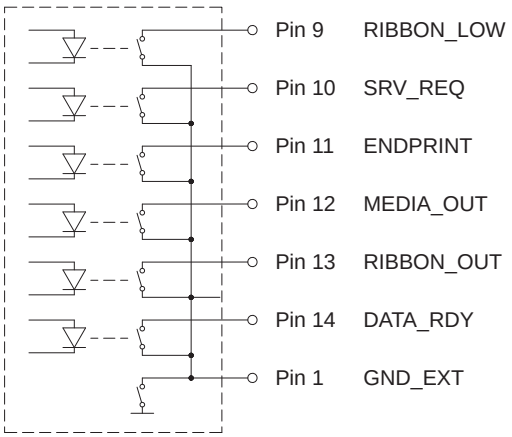
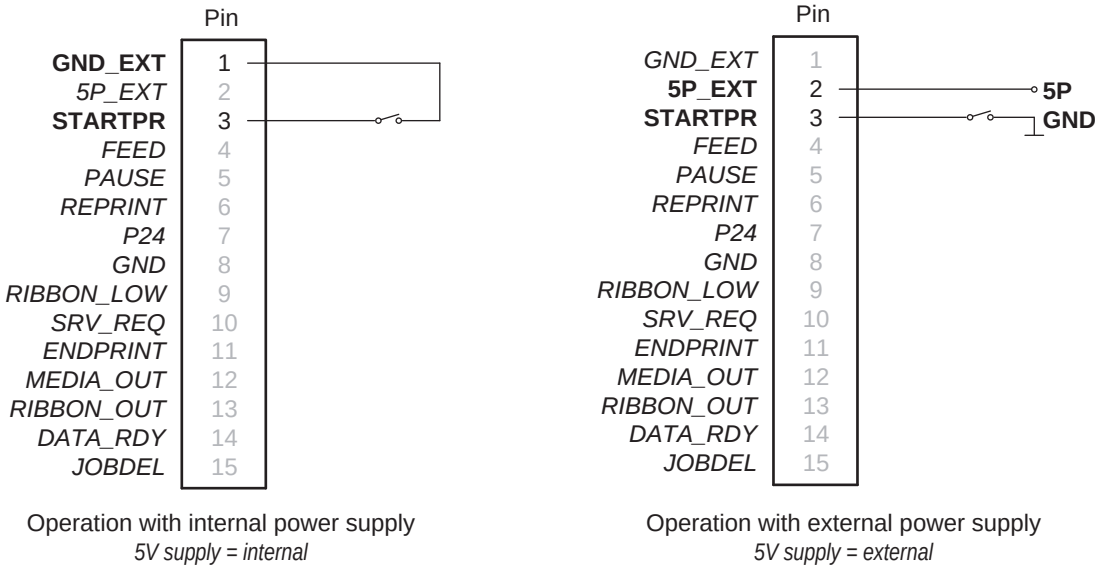


Figure 3 Circuit of the outputs

4 External Minimum Circuit



Operation with internal power supply
5V supply = internal

Operation with external power supply
5V supply = external

Figure 4 External minimum circuit

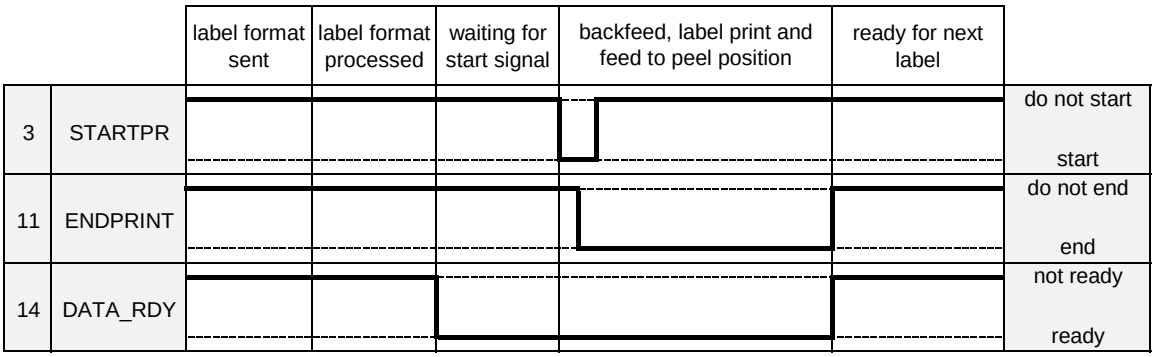


Figure 5 Signal map PX Q with I/O 5V15-2 or I/O 5V15-3 in ENDPRINT Mode 1

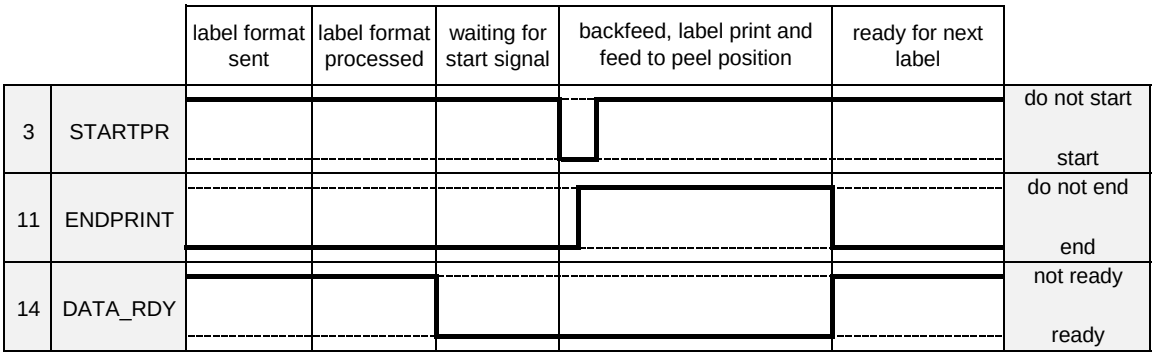


Figure 6 Signal map PX Q with I/O 5V15-2 or I/O 5V15-3 in ENDPRINT Mode 2

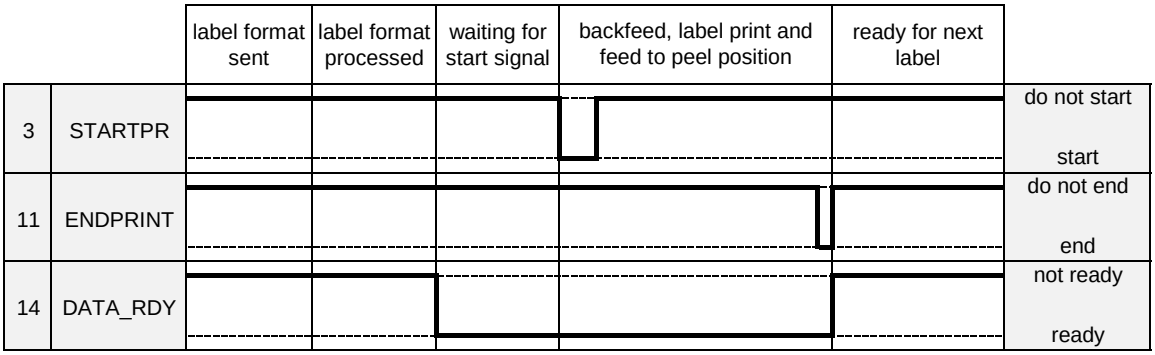


Figure 7 Signal map PX Q with I/O 5V15-2 or I/O 5V15-3 in ENDPRINT Mode 3

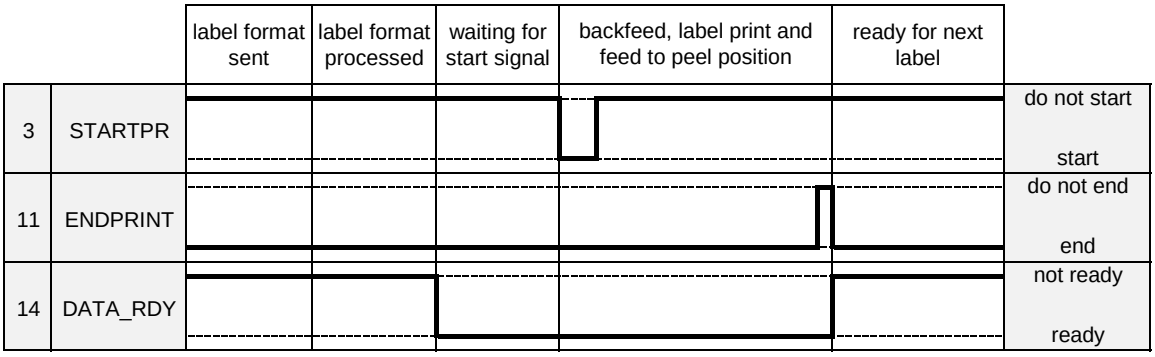


Figure 8 Signal map PX Q with I/O 5V15-2 or I/O 5V15-3 in ENDPRINT Mode 4