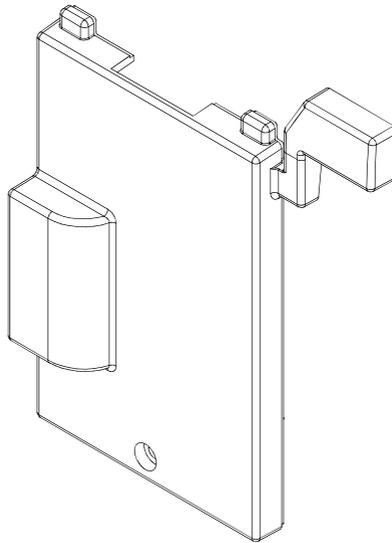




**Present Sensor PS6 / PS8**  
for Transfer Printer  
BP-PR PLUS Series

**Operator's Manual**



# Table of Contents

- 1 Product Description ..... 3**
- 2 Safety Instructions ..... 4**
- 3 Mounting ..... 4**
- 4 Printer Configuration ..... 6**
- 5 Operation ..... 8**
- 6 Operation Modes ..... 8**
  - Print After Label Removing (PS6/PS8) ..... 8
  - Print on Demand with Manual Releasing (PS6 only) ..... 9
  - Print on Demand with Releasing via an External Control ..... 9
- 7 Pin Assignment of the Peripheral Interface ..... 10**
  - Overview Signals ..... 10
  - Explanation of the Signals ..... 11
  - Circuit Diagram of Inputs ..... 14
  - Circuit Diagram of Outputs ..... 14
- 8 Examples of External Circuits for Present Sensor PS6 ..... 15**

## 1 Product Description

The **Present Sensors PS6** and **PS8** are optional equipment for the **P-versions** of **BP-PR PLUS** printers. These printers are equipped with an internal rewinder and a dispense edge and therewith prepared for operation in peel-off mode.

In peel-off mode, labels are removed from the silicon liner immediately after printing. The labels are then placed in the peel position for further processing.

### Present Sensor **PS8**

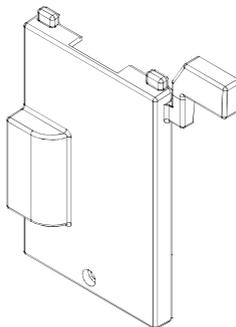
This sensor is offered for manual peel-off operation. A see-through sensor detects a label in the peel position and stops the print job. After removing of the label the next label is printed.

### Present Sensor **PS6**

This sensor is made for manual and automatic peel-off operation. In comparison to **PS8**, the Present Sensor **PS6** has an additional peripheral interface for the connection of an external device to control the peel-off operation.

Without external circuit **PS6** has the same function as **PS8**.

If an external device is connected, the print job is also stopped by the see-through sensor, when a label is detected in the peel position. But after removing the label, the printer waits for an external signal to start printing the next label.



**Fig. 1 Present Sensor**

## 2 Safety Instructions



### CAUTION!

- The printer must be powered off before attaching the Present Sensor!
- The Present Sensor may only be used for the purposes described in this manual. Using this module for any other purpose is not allowed!
- The printer must be powered off before attaching a control device to the Present Sensor PS6!

## 3 Mounting



### NOTICE!

Before mounting the Present Sensor PS6 (1), check that the jumper (4) on the board (2) is positioned on the jumper position JP4 (3).

To position the jumper correctly, pull the jumper (4) carefully from the pins on the circuit board (2) and reposition it on the jumper position JP4 (3).

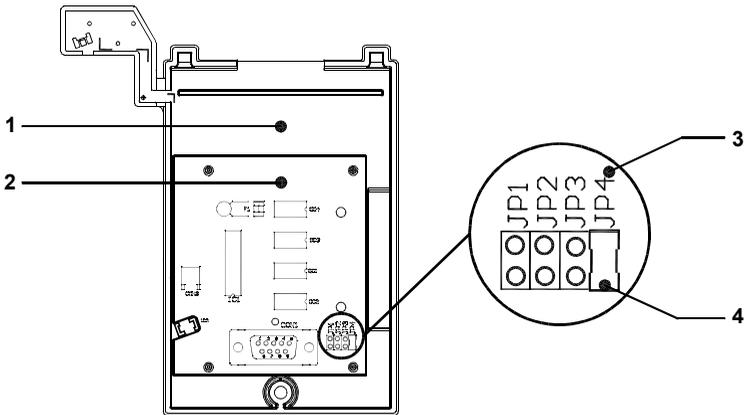
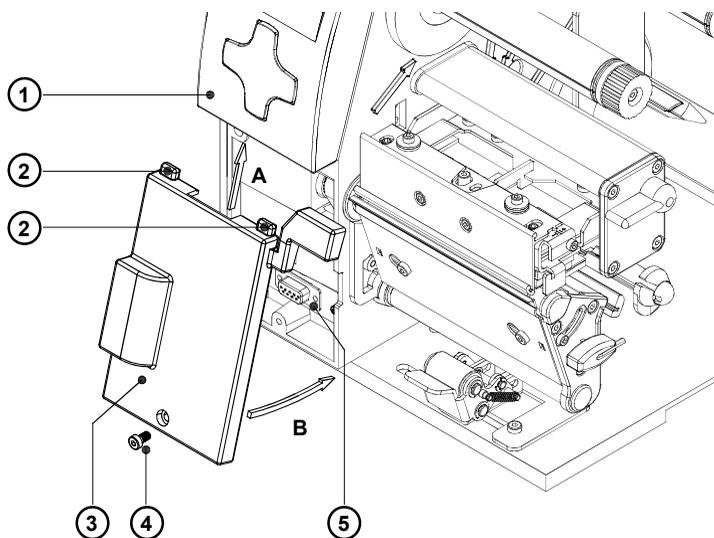


Fig. 2 Positioning the Jumper on Present Sensor PS6



**Fig. 3 Mounting the Present Sensor**

1. Switch off the printer.
2. Slide the guiding pins (2) of the Present Sensor (3) according to arrow **A** under the control panel cover (1).
3. Swing the lower edge of the module according to arrow **B** against the printer. Make sure the plug-in connector of the Present Sensor is inserted into the 15 pin peripheral port (5) of the printer.
4. Secure the Present Sensor (3) by tightening the screw (4).



**CAUTION!**

The power supply of the Present Sensors is made by printer. Connecting an external voltage at the peripheral interface of the Present Sensor PS6 could damage the module.

## 4 Printer Configuration

Once the Present Sensor is connected to the printer it will be recognized by the printer automatically.

The printer can be configured to suit the individual requirements of peel-off mode in the Setup. When the module is installed, the „Demand sensor“ menu will appear.



### NOTICE!

Pay attention to the instructions for configuration in the Printer's Operator's Manual.

 Setup			
 Machine param.			
Parameter	Meaning	Selection	
 Demand sensor			
 Peel position	Shift the position of the dispensed label relative to the dispensing edge Default : <b>0,0 mm</b>	+9,9 ... -9,9	
 Backfeed delay	Delay time between removing the label from the peel position and the backfeed of the label. Default : <b>250 ms</b>	50 ms ... 0 ms in 50 ms increments	
 Limit peel-off spd.	Limitation of the print speed in the peel-off mode to 100 mm/s Default : <b>On</b>	Off On	

**Table 1 Parameter „Demand sensor“**

In the menu „Setup“ -> „Print parameters“ the method of backfeed for the peel-off mode can be selected.

 Setup			
 Print parameters			
Parameter	Meaning	Selection	
 Backfeed	Method of backfeed when using peel-off mode or cut mode Default : <b>smart</b>	smart always	

**Table 2 Parameter „Backfeed“**

## Peel position

This parameter allows for adjustment of the presentation position of the printed label on the dispense plate. Peel position with the initial offset value of "0" causes the printed label to be peeled off from the liner leaving approximately a .1" (2mm) wide strip of the label still adhering to the liner. The amount of label left adhering to the liner can be altered with this parameter. Positive offset values cause more of the label surface to protrude past the dispense plate. The offset values from "Peel position" and from software are added together for execution.

## Backfeed delay

The "Backfeed delay" adjustment allows you to input an amount of time in milliseconds between when the label is removed from the peel edge and when the backfeed is executed. Using "Backfeed delay" should prevent labels from becoming jammed between the printhead and print roller when the liner is fed back too quickly.

## Limit peel-off spd.

This parameter allows to limit the print speed in peel-off mode to 4 ips (100mm/s). When a **BP-PR PLUS** printer is delivered, the maximum print speed in peel-off mode is limited to 4 ips (100mm/s). Even if the print speed for the peel-off mode is set higher in the software, the print job will be carried out with a speed of 4 ips (100mm/s). This limitation guarantees correct operation of the **BP-PR 200 PLUS-P/BP-PR 300 PLUS-P** in peel-off mode when using maximum supply rolls (diameter 8in/200mm), width 4.7in/120mm).

When using smaller supply rolls it is possible to operate with higher speed. For that purpose the speed limitation must be switched off. Then the print speed can be set on all speeds up to 10 ips (250mm/s).



### **CAUTION!**

**When operating the BP-PR 200/300 PLUS-P in peel-off mode with higher speed it is strongly recommended to carry out some tests beforehand by using appropriate rolls with maximum diameter!**

The speed limitation in the peel-off mode does not affect any other operation modes like tear-off mode, cut mode or external rewinding.

## Backfeed

In peel-off mode, the material will be stopped in a position where the leading edge of the following label has already been forwarded beyond the printhead. The printer then will backfeed the label material from its peel position to the printhead. Therefore, the next label can be printed completely.

A backfeed will always be performed if the parameter is set to "always". If the setting is "smart", the backfeed will only be performed if the front label is in its peel position and the printer has not yet received all of the data for printing the following label. Otherwise, the print of the second label will be started, but only completed once the first label has been removed.

## 5 Operation

The printer is ready for operation if all connections have been made and all materials are loaded correctly.



### **NOTICE!**

**For loading the media for operation in peel-off mode follow the instructions in the operator's manual of your printer.**

After loading the media it is necessary to locate top of form by pressing the **FEED** key. Remove the dispensed labels manually from the dispense plate.

The top of form is not necessary when the printhead was not lifted between print jobs. This also applies if the printer was powered off between print jobs.



### **NOTICE!**

**To operate the Present Sensor the peel-off mode must be activated in the software!**

**For direct programming use the P-command ( see Programming Manual) !**

## 6 Operation Modes

With the Present Sensor **PS8** only the operation mode „Print after label removing“ is possible.

The Present Sensor **PS6** can be used in several operation modes. The operation mode depends on the peripheral device connected to the Present Sensor **PS6**.

A detailed description of the signals you find in chapter "Pin Assignment of the Peripheral Interface".

### **Print After Label Removing (PS6 / PS8)**

Once a present sensor is mounted, the printer can be used in peel-off mode.

The sensor detects a label in the peel position and stops the print job. Directly after removing the label the next label is printed.

So, the print of a label is executed if

- a print job is available,
- there is no label in the peel position

### **Print on Demand with Manual Releasing (PS6 only)**

In this operation mode the connection of a trigger switch to the peripheral interface of the Present Sensor **PS6** is necessary.

After removing the label, printing of the next label will be executed by pressing the trigger switch.

The print of a label is executed if:

- a print job is available,
- there is no label in the peel position,
- the trigger switch sends the XSTART signal.

This operation mode requires that there is a contact between Pin13 (STA) and Pin8/12 (GND).

### **Print on Demand with Releasing via an External Control (PS6 only)**

In this operation mode an external control is connected to the peripheral interface of the Present Sensor **PS6**.

After removing the label printing of the next label will be executed by the start signal from an external control device.

The print of a label is executed if:

- a print job is available,
- there is no label in the peel position,
- the external control sends the XSTART signal.

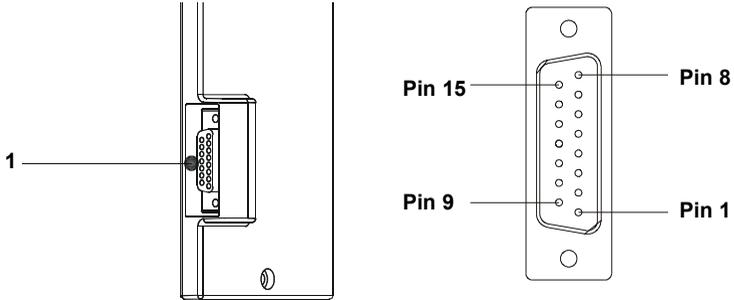
This operation mode requires that there is a contact between Pin13 (STA) and Pin8/12 (GND).

## 7 Pin Assignment of the Peripheral Interface on PS6

### Overview of the Signals

For use in a network environment or with a switch, the **Present Sensor PS6** is equipped with a peripheral interface to allow control of the dispensing process.

The interface has a 15 pin SUB-D connector (1).



**Fig. 4 Peripheral Interface of the Present Sensor PS6**

Pin	Signal	Direction	System Function	User Function
1	XSTART	Input	Start signal	
2	XFEH	Input	External Error	
3	-			
4	XESP	Output	Label in peel position	Control bit 3
5	XEDG	Output	No existing print job	Control bit 1
6	XDNB	Output	Printer is not ready	Control bit 2
7	XEDST	Output	Print of a label has started	Control bit 0
8	GND		Ground (0V)	
9	RXSTART	(Input)	Start signal (revers line)	
10	RXFEH	(Input)	External error (revers line)	
11	-			
12	GND		Ground (0V)	
13	STA	Input	Start signal is active	
14	RÜL	Output	Revers line (for all output signals)	
15	24P	(Output)	Operating voltage +24V, Si T 100mA	

**Table 3 Pin Assignment of the Peripheral Interface**



#### **NOTICE!**

The description of the system functions is included in this manual. For more information about the user functions see the Programming Manual ( Commands x and X).

## Explanation of the Signals

### Pin1 - XSTART - Start

The activation of the signal XSTART triggers the start of printing a label. This signal is checked if there is a connection between signal STA and ground GND.

The signal XSTART is active when current flows between Pin1 and Pin9.

### Pin2 - XFEH - External error

An error has occurred on the external device.

The label print is stopped and the display of the printer shows the message "External error". The signal XDNB is active.

To continue the print job you might have to remove by hand the label from the peel position. Following open the print head and place the label material backward so that the next printable label on the silicon liner will be moved through the label sensor again. Close the print head.

After the external error is corrected, it is possible to press the **PAUSE** key to continue the print job. Printing of the next label starts when the signal XSTART is active.

Occured the external error while the printer was printing, the label will be printed again.

A label which was in peel position while the external error occurred will not be printed again. In that case the signal XESP stays active until the next label is taken from the peel position or, in case of the last label, until you press the **CANCEL** key.

If you press the **CANCEL** key after the error is corrected the print job will be canceled and the printer will be reset to its initial state.

The signal XFEH is active, when current flows between Pin2 and Pin10.

### Pin4 - XESP - Label is in peel position

There is a label in the peel position.

This signal is active if the contact between Pin4 and Pin14 is open.

### Pin5 - XEDG - No existing print job

There is no print job currently available.

In this state the contact between Pin5 and Pin14 is open.

#### Pin6 - XDNB - Printer is not ready

An error has occurred on the printer.

The label print is stopped and the details and type of error can be read from the printer's display ( 'Ribbon out'; 'Paper out'; 'No label'; 'External Error' ).

To continue the print job you might have to remove by hand the label from the peel position. In following open the print head and place the label material backward so that the next printable label on the silicon liner will be moved through the label sensor again. Close the print head.

After the external error is corrected, it is possible to press the **[PAUSE]** key to continue the print job. Printing of the next label starts when the signal XSTART is active.

Occured the external error while the printer was printing, the label will be printed again.

A label which was in peel position while the external error occurred will not be printed again. In that case the signal XESP stays active until the next label is taken from the peel position or, in case of the last label, until you press the **[CANCEL]** key.

If you press the **[CANCEL]** key after the error is corrected the print job will be canceled and the printer will be reset to its initial state.

The signal XDNB is active if the contact between Pin6 and Pin14 is opened.

#### Pin7 - XEDST - Print of label has started

The printing of a label is indicated with a 20ms pulse.

This signal is active if the contact between Pin7 and Pin14 is opened.

#### Pin8 - GND - Ground (0V)

#### Pin9 - RXSTART - Reverse line of the signal XSTART

#### Pin10 - RXFEH - Reverse line of the signal XFEH

#### Pin12 - GND - Ground (0V)

Pin13 - STA - Start signal is active

If the signal STA is connected with GND (Pin8/12), the printer waits for the external signal XSTART after removing a label from the peel position to print a next label.

In operation mode „Print after label removing“, do not use the signal STA.  
In operation mode „Print on demand“, connect the signal STA (Pin13) with GND (Pin8/12).

Pin14 - RUEL - Reverse line ( for all output signals)

Pin15 - 24P - Operating voltage +24V, Si T 100mA

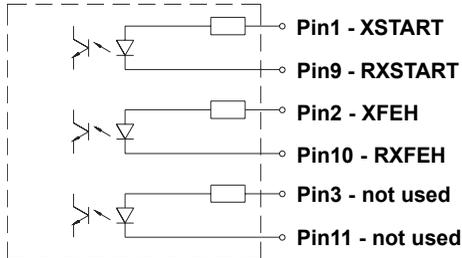
The printer provides an operating voltage of 24V at Pin15.



**CAUTION !**  
**DO NOT connect any external voltage at Pin 15 !**

### Circuit Diagram of Inputs

The XSTART and XFEH inputs are optocouplers with a current limiting resistor of 2.2kΩ giving a voltage of 24V in the input circuit. For each signal X[IN] there is a separate reverse line X[IN]R via the plug connector. From that, the following matching pairs of signals result :



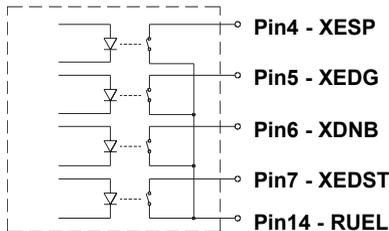
**Fig. 5 Internal Circuit of the Inputs**

The external control device must be equipped with a 15 pin SUB-D connector. For some operation modes the input signal STA (Pin13) has to be connected with GND (Pin12).

### Circuit Diagram of Outputs

All outputs are recognized through solid state relays. Their outputs are connected to one another on one-side. The joint line is lead to the plug connector as a RÜL signal. The switch function of the outputs is to open or close the contact between the joint line RÜL and the respective output.

Electrical requirements :  $U_{max} = 42V$   
 $I_{max} = 100mA$



**Fig. 6 Internal Circuit of the Outputs**

## 8 Examples of External Circuits for Present Sensor PS6

The external control device ( trigger switch, external control, optical sensor) must be equipped with a 15 pin SUB-D connector. For some operation modes the input signal STA (Pin13) has to be connected with GND (Pin8/12).

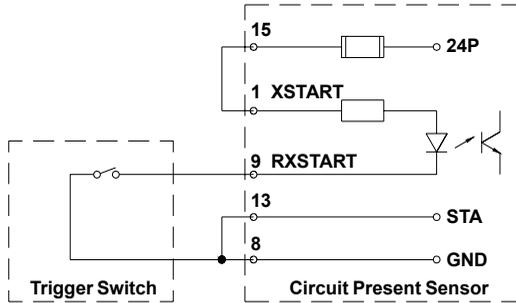


Fig. 7 Example with Trigger Switch

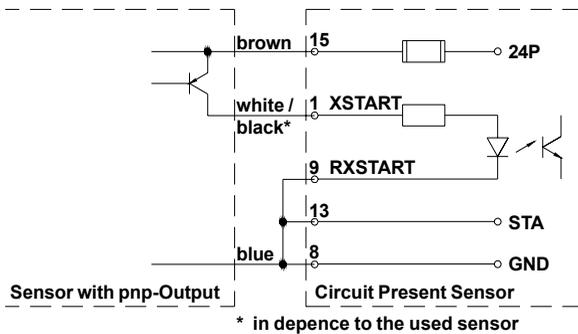


Fig. 8 Example for an optical Sensor with pnp-output

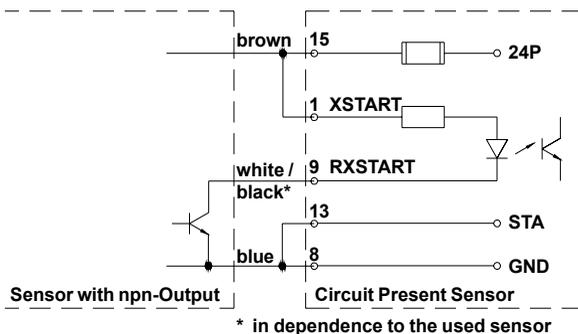


Fig. 9 Example for an optical Sensor with npn-output



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