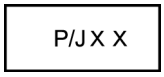
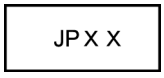
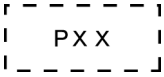
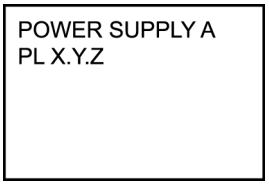
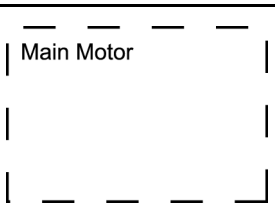
Chapter 7 Wiring Diagrams and Signal Information CONTENTS

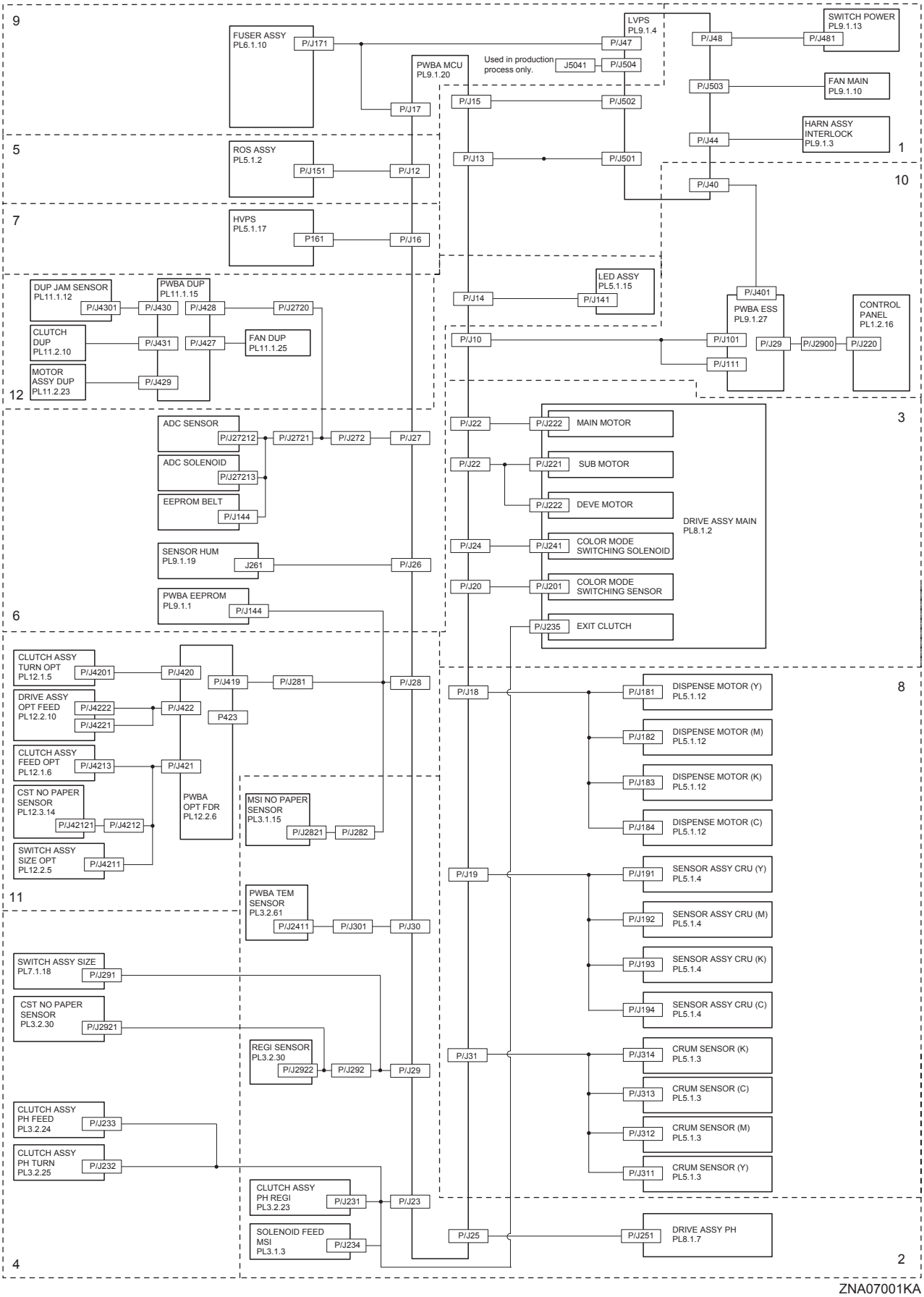
1. Connection Wiring Diagram

1.1 Symbols in the General Connection Wiring Diagram

The symbols in the general connection wiring diagram are described below.

Symbol	Description
	Represents an interconnection between parts using wiring harness or wire.
	Represents an interconnection which differs according to the specifications.
	Represents an interconnection between parts using a conductive member such as a plate spring.
	Represents a connection between parts by tightening of a screw.
	Indicates a frame ground.
	Represents a connector. The connector No. is indicated inside the box.
	Represents a connection terminal with a plate spring on the printed circuit board. The connector (terminal) No. is indicated inside the box.
	Represents a connector directly connected to the printed circuit board. The connector No. is indicated inside the box.
	The box containing a part name represents a part. "PL X.Y.Z" indicates the item "Z" of the plate (PL) "X.Y" described in Chapter 5 "Parts List."
	Represents a functional part within a part, and indicates the name of the functional part.
	Represents a section in "2. Interconnection Wiring Diagram of Parts," and indicates its section No.
	Represents a screw for fixing wiring harness and a conductive member such as a plate spring.
	Represents a conductive member such as a plate spring.

1.2 General Wiring Diagram

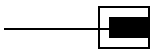
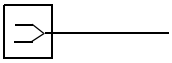
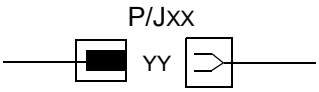
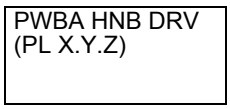
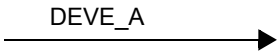
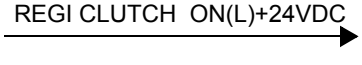
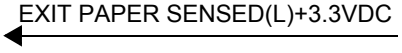


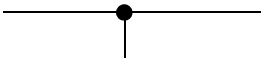
ZNA07001KA

2. Interconnection Wiring Diagram of Parts

2.1 Notes on Using the Wiring Diagram between Parts

The following describes the legend of the wiring diagrams between parts shown on the following pages.

Symbols	Description
	Denotes a plug.
	Denotes a jack.
	Denotes Pin yy and Jack yy of the connector Pxx and Jxx.
	Denotes the parts. PL X.Y.Z implies the item "Z" of plate (PL) "X.Y" in Chapter 5. Parts List.
	Denotes functional parts attached with functional parts name.
	Denotes the control and its outline in PWB.
	Denotes a connection between parts with harnesses or wires, attached with signal name/contents.
	Denotes the function, and logic value of the signal to operate the function (Low: L, High: H). The given voltage is for signal in high status. The arrow indicates the direction of signal.
	Denotes the function, and logic value of the signal when the function operated (Low: L, High: H). The given voltage is for signal in high status. The arrow indicates the direction of signal.

Symbols	Description
	Denotes a connection between wires.
I/L +24VDC	Denotes DC voltage when the interlock switch in HNB MCU WITH CPU turns on.
+5VDC +3.3VDC	Denotes DC voltage.
SG	Denotes signal ground.
AG	Denotes analog ground.
RTN	Denotes the return.

2.2 Configuration of the Interconnection Wiring Diagram of Parts

The interconnection wiring diagram is divided into 12 sections. § 1 to § 12 indicate details of the interconnections of parts.

§ 1 DC POWER SUPPLY
Connections of LVPS with PWBA MCU.
Connections of SWITCH POWER with LVPS.
Connections of FAN MAIN with LVPS.
Connections of HARN ASSY INTERLOCK with LVPS.

§ 2 MSI & REGI
Connections of DRIVE ASSY PH with PWBA MCU.
Connections of CLUTCH ASSY PH REGI with PWBA MCU.
Connections of SOLENOID FEED MSI with PWBA MCU.
Connections of REGI SENSOR with PWBA MCU.
Connections of TEMP. SENSOR with PWBA MCU.
Connections of MSI NO PAPER SENSOR with PWBA MCU.

§ 3 DRIVE
Connections of MAIN DRIVE ASSY with PWBA MCU.

§ 4 FEEDER
Connections of CST NO PAPER SENSOR with PWBA MCU.
Connections of SWITCH ASSY SIZE with PWBA MCU.
Connections of CLUTCH ASSY PH FEED with PWBA MCU.
Connections of CLUTCH ASSY PH TURN with PWBA MCU.

§ 5 ROS
Connections of ROS ASSY with PWBA MCU.

§ 6 XEROGRAPHIC
Connections of ADC SENSOR with PWBA MCU.
Connections of ADC SOLENOID with PWBA MCU.
Connections of EEPROM BELT with PWBA MCU.
Connections of SENSOR HUM with PWBA MCU.
Connections of PWBA EEPROM (XPRO) with PWBA MCU.
Connections of LED ASSY with PWBA MCU.

§ 7 HIGH VOLTAGE
Connections of HVPS with PWBA MCU.

§ 8 DEVELOPER

Connections of DISPENSE MOTOR (Y) with PWBA MCU.
Connections of DISPENSE MOTOR (M) with PWBA MCU.
Connections of DISPENSE MOTOR (C) with PWBA MCU.
Connections of DISPENSE MOTOR (K) with PWBA MCU.
Connections of SENSOR ASSY CRU (Y) with PWBA MCU.
Connections of SENSOR ASSY CRU (M) with PWBA MCU.
Connections of SENSOR ASSY CRU (C) with PWBA MCU.
Connections of SENSOR ASSY CRU (K) with PWBA MCU.
Connections of CRUM SENSOR (Y) with PWBA MCU.
Connections of CRUM SENSOR (M) with PWBA MCU.
Connections of CRUM SENSOR (C) with PWBA MCU.
Connections of CRUM SENSOR (K) with PWBA MCU.

§ 9 FUSER

Connections of FUSER ASSY with PWBA MCU.
Connections of FUSER ASSY with LVPS.
Connections of PWBA MCU with LVPS.

§ 10 CONTROLLER

Connections of PWBA ESS with PWBA MCU.
Connections of CONTROL PANEL with PWBA ESS.
Connections of LVPS with PWBA ESS.

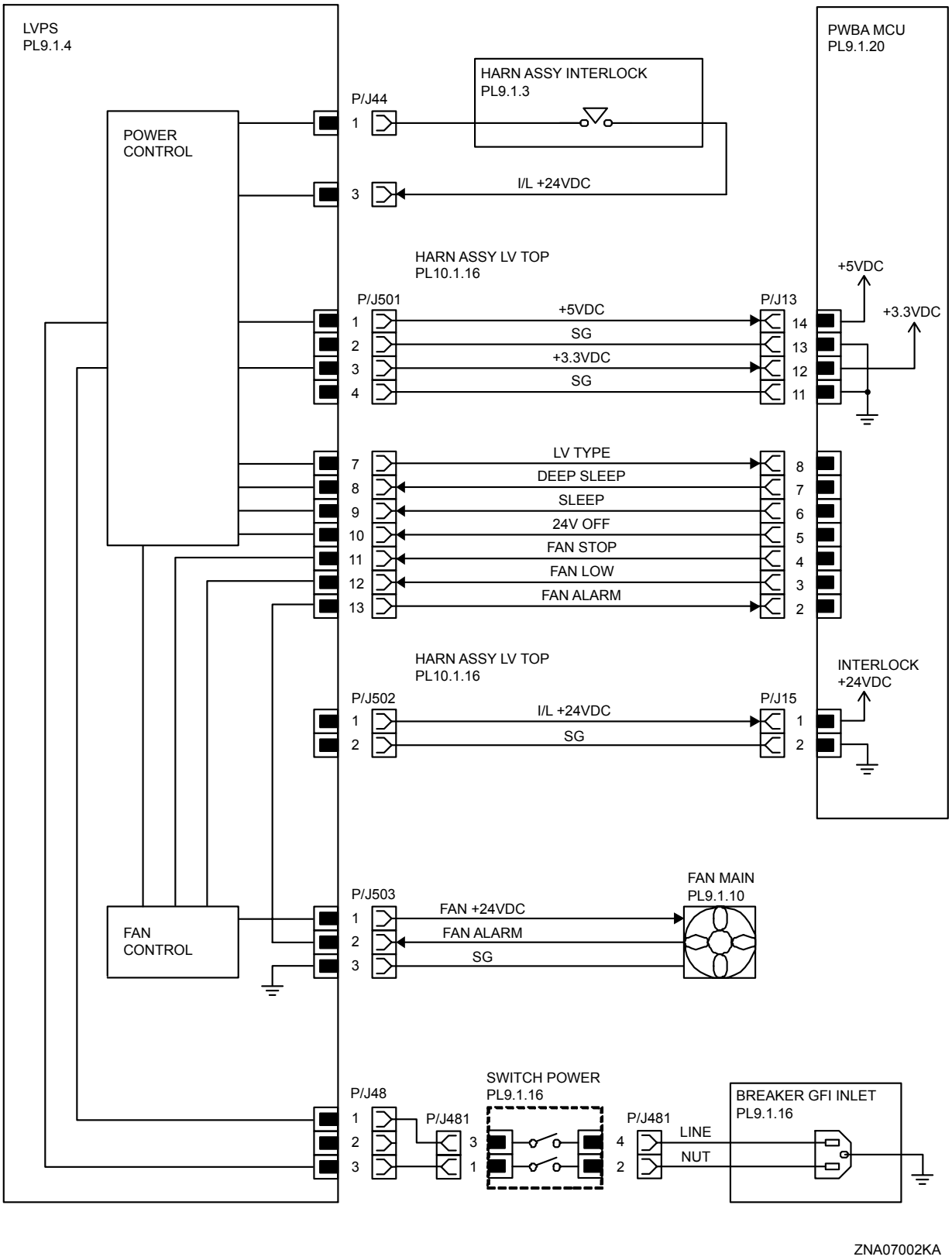
§ 11 550 FEEDER

Connections of PWBA OPT FDR with PWBA MCU.
Connections of CLUTCH ASSY TURN OPT with PWBA OPT FDR.
Connections of DRIVE ASSY OPT FDR with PWBA OPT FDR.
Connections of CLUTCH ASSY FEED OPT with PWBA OPT FDR.
Connections of CST NO PAPER SENSOR with PWBA OPT FDR.
Connections of SWITCH ASSY SIZE OPT with PWBA OPT FDR.

§ 12 DUPLEX

Connections of PWBA DUP-H with PWBA MCU.
Connections of DUP JAM SENSOR with PWBA DUP-H.
Connections of CLUTCH DUP with PWBA DUP-H.
Connections of MOTOR ASSY DUP with PWBA DUP-H.
Connections of FAN DUP with PWBA DUP-H.

§ 1 DC POWER SUPPLY



ZNA07002KA

Signal line name	Description
LV TYPE DEEP SLEEP SLEEP 24V OFF	Control signal of the LVPS
FAN STOP FAN LOW FAN ALARM	Drive control signal of the SIDE FAN

- LVPS overcurrent protection circuit

  This circuit stops all outputs, if the power supply voltage 24VDC, 5VDC, or 3.3VDC is shorted.
  The circuit is reset, when after the cause of short was removed, the power is turned off, and then on again after certain time.

- LVPS overvoltage protection circuit

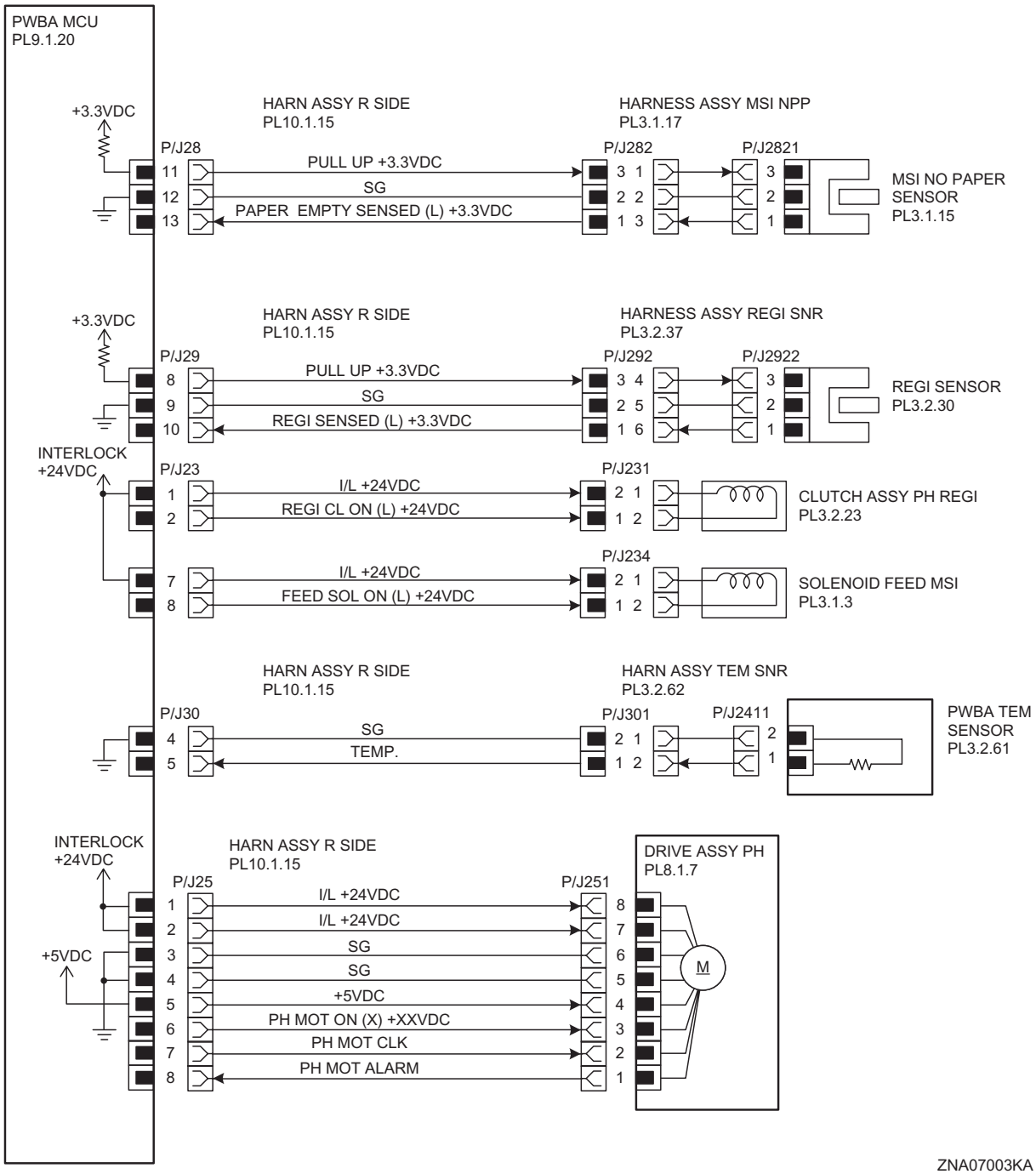
  This circuit stops all outputs, if the power supply voltage 24VDC, 5VDC, or 3.3VDC exceeds the specified voltage respectively.
  At this time, the operating point is 32VDC(TBD) or less for 24VDC, 7VDC(TBD) or less for 5VDC, or 4.4VDC(TBD) or less for 3.3VDC.
  The circuit is reset, when the power is turned off, and then on again after certain time.

- Sleep mode and deep sleep mode

  The output of the following power supply are stopped according to the these signals.

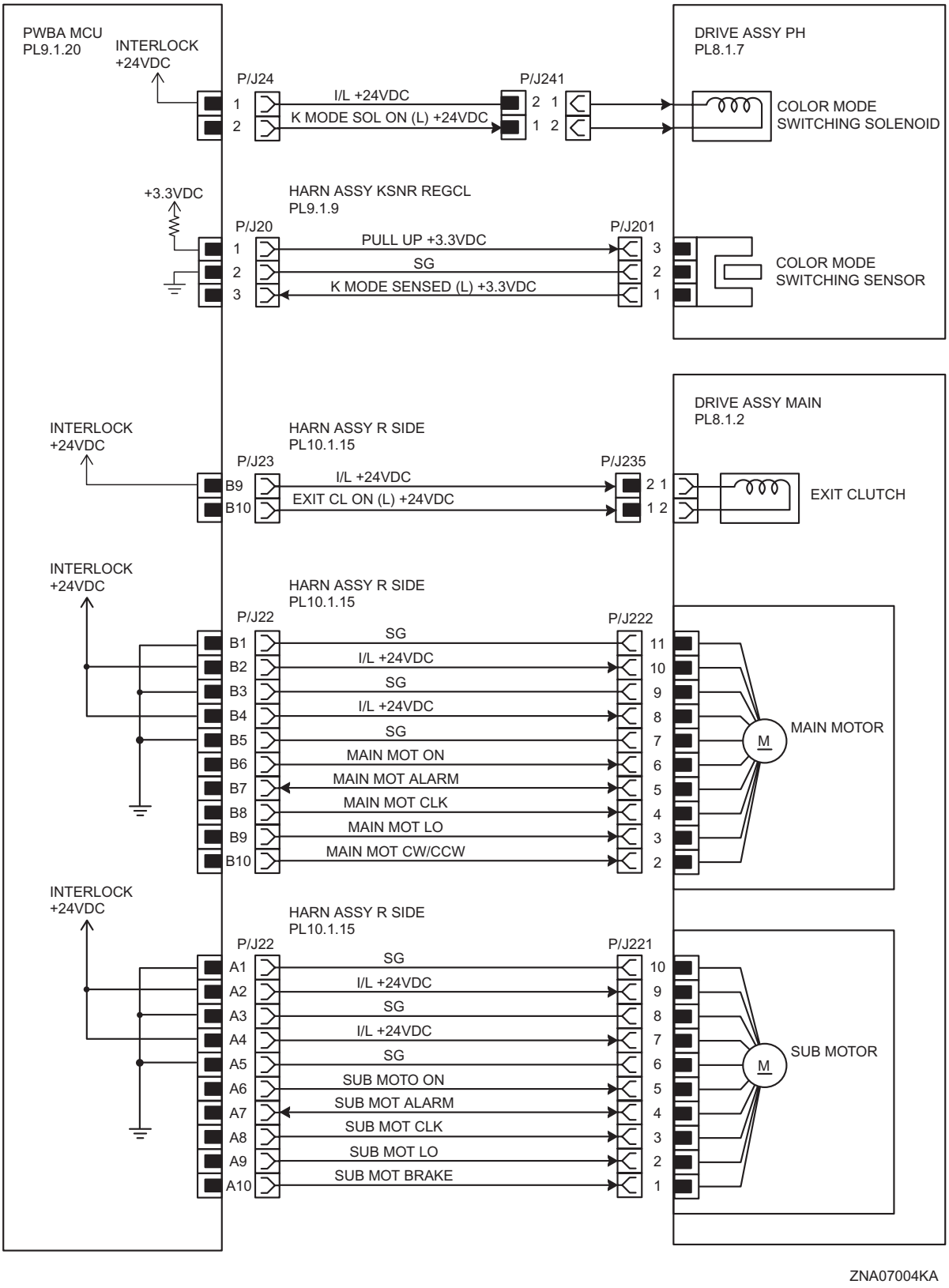
Output / Signal	+24VDC	+5VDC	+3.3VDC
Sleep	OFF	OFF	ON
Deep sleep	OFF	OFF	OFF

§ 2 MSI&REGI


PWBA MCU
PL9.1.20
+3.3VDC
HARN ASSY R SIDE
PL10.1.15
HARNESS ASSY MSI NPP
PL3.1.17
P/J28
P/J282
P/J2821
11
12
13
PULL UP +3.3VDC
SG
PAPER EMPTY SENSED (L) +3.3VDC
3 1
2 2
1 3
3
2
1
MSI NO PAPER SENSOR
PL3.1.15
+3.3VDC
HARN ASSY R SIDE
PL10.1.15
HARNESS ASSY REGI SNR
PL3.2.37
P/J29
P/J292
P/J2922
8
9
10
PULL UP +3.3VDC
SG
REGI SENSED (L) +3.3VDC
3 4
2 5
1 6
3
2
1
REGI SENSOR
PL3.2.30
INTERLOCK
+24VDC
P/J23
P/J231
1
2
I/L +24VDC
REGI CL ON (L) +24VDC
2 1
1 2
CLUTCH ASSY PH REGI
PL3.2.23
P/J234
7
8
I/L +24VDC
FEED SOL ON (L) +24VDC
2 1
1 2
SOLENOID FEED MSI
PL3.1.3
HARN ASSY R SIDE
PL10.1.15
HARN ASSY TEM SNR
PL3.2.62
P/J30
P/J301
P/J2411
4
5
SG
TEMP.
2 1
1 2
2
1
PWBA TEM SENSOR
PL3.2.61
INTERLOCK
+24VDC
HARN ASSY R SIDE
PL10.1.15
DRIVE ASSY PH
PL8.1.7
P/J25
P/J251
+5VDC
1
2
3
4
5
6
7
8
I/L +24VDC
I/L +24VDC
SG
SG
+5VDC
PH MOT ON (X) +XXVDC
PH MOT CLK
PH MOT ALARM
8
7
6
5
4
3
2
1
M
ZNA07003KA

Signal line name	Description
PAPER EMPTY SENSED (L) +3.3VDC	Paper detect signal of the MSI by the Sensor Photo (MSI NO PAPER SENSOR)
REGI SENSED (L) +3.3VDC	Paper detect signal of the Regi part by the Sensor Photo (REGI SENSOR)
REGI CL ON (L) +24VDC	ON/OFF signal of the REGI CLUTCH
FEED SOL ON (L) +24VDC	ON/OFF signal of the MSI FEED SOLENOID
TEMP.	Data on temperature inside the printer.
PH MOT ON (X) +XXVDC PH MOT CLK PH MOT ALARM	Drive control signal of the DRIVE ASSY PH

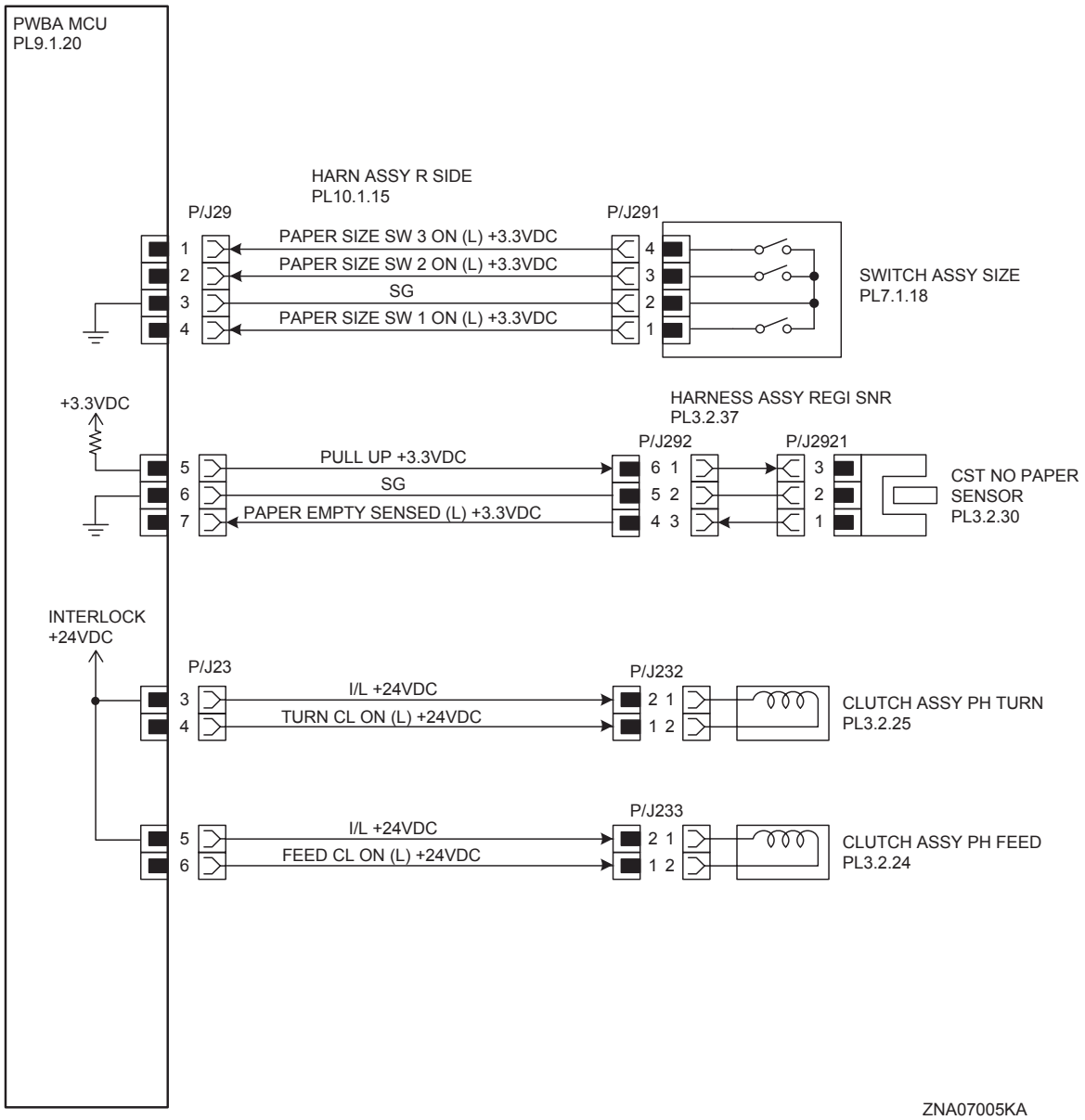
§ 3 DRIVE



ZNA07004KA

Signal line name	Description
K MODE SOL ON (L) +24VDC	ON/OFF signal of the COLOR MODE SWITCHING SOLENOID
K MODE SENSED (L) +3.3VDC	Color mode detect signal of the DRIVE ASSY PH by the Sensor Photo (COLOR MODE SWITCHING SENSOR)
MAIN MOT ON MAIN MOT ALARM MAIN MOT CLK MAIN MOT LO MAIN MOT CW/CCW	Drive control signal of the MAIN MOTOR
SUB MOT ON SUB MOT ALARM SUB MOT CLK SUB MOT LO SUB MOT BRAKE	Drive control signal of the SUB MOTOR
EXIT CL ON (L) +24VDC	ON/OFF signal of the EXIT CLUTCH

§ 4 FEEDER


PWBA MCU
PL9.1.20
HARN ASSY R SIDE
PL10.1.15
P/J29
P/J291
PAPER SIZE SW 3 ON (L) +3.3VDC
PAPER SIZE SW 2 ON (L) +3.3VDC
SG
PAPER SIZE SW 1 ON (L) +3.3VDC
SWITCH ASSY SIZE
PL7.1.18
+3.3VDC
HARNESS ASSY REGI SNR
PL3.2.37
P/J292
P/J2921
PULL UP +3.3VDC
SG
PAPER EMPTY SENSED (L) +3.3VDC
CST NO PAPER
SENSOR
PL3.2.30
INTERLOCK
+24VDC
P/J23
P/J232
I/L +24VDC
TURN CL ON (L) +24VDC
CLUTCH ASSY PH TURN
PL3.2.25
P/J233
I/L +24VDC
FEED CL ON (L) +24VDC
CLUTCH ASSY PH FEED
PL3.2.24
ZNA07005KA

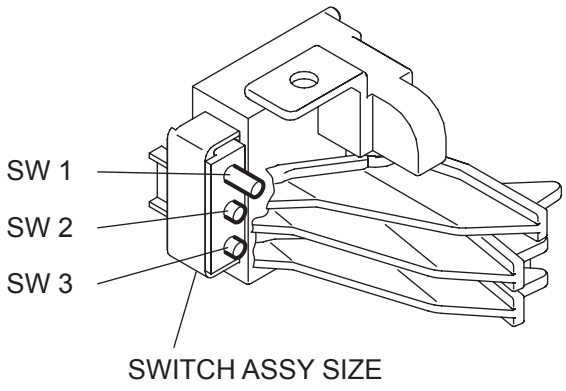
Signal line name	Description
PAPER SIZE SW 1 ON (L) +3.3VDC PAPER SIZE SW 2 ON (L) +3.3VDC PAPER SIZE SW 3 ON (L) +3.3VDC	ON/OFF signal of the SWITCH ASSY SIZE
PAPER EMPTY SENSED (L) +3.3VDC	Paper detect signal of the Feeder by the Sensor Photo (NO PAPER SENSOR)
TURN CL ON (L) +24VDC	ON/OFF signal of the TURN CLUTCH
FEED CL ON (L) +24VDC	ON/OFF signal of the FEED CLUTCH

- Outline of SWITCH ASSY SIZE

The paper size is determined by a combination of ON/OFF statuses of the SW 1, SW 2, and SW 3 switches of SWITCH ASSY SIZE.

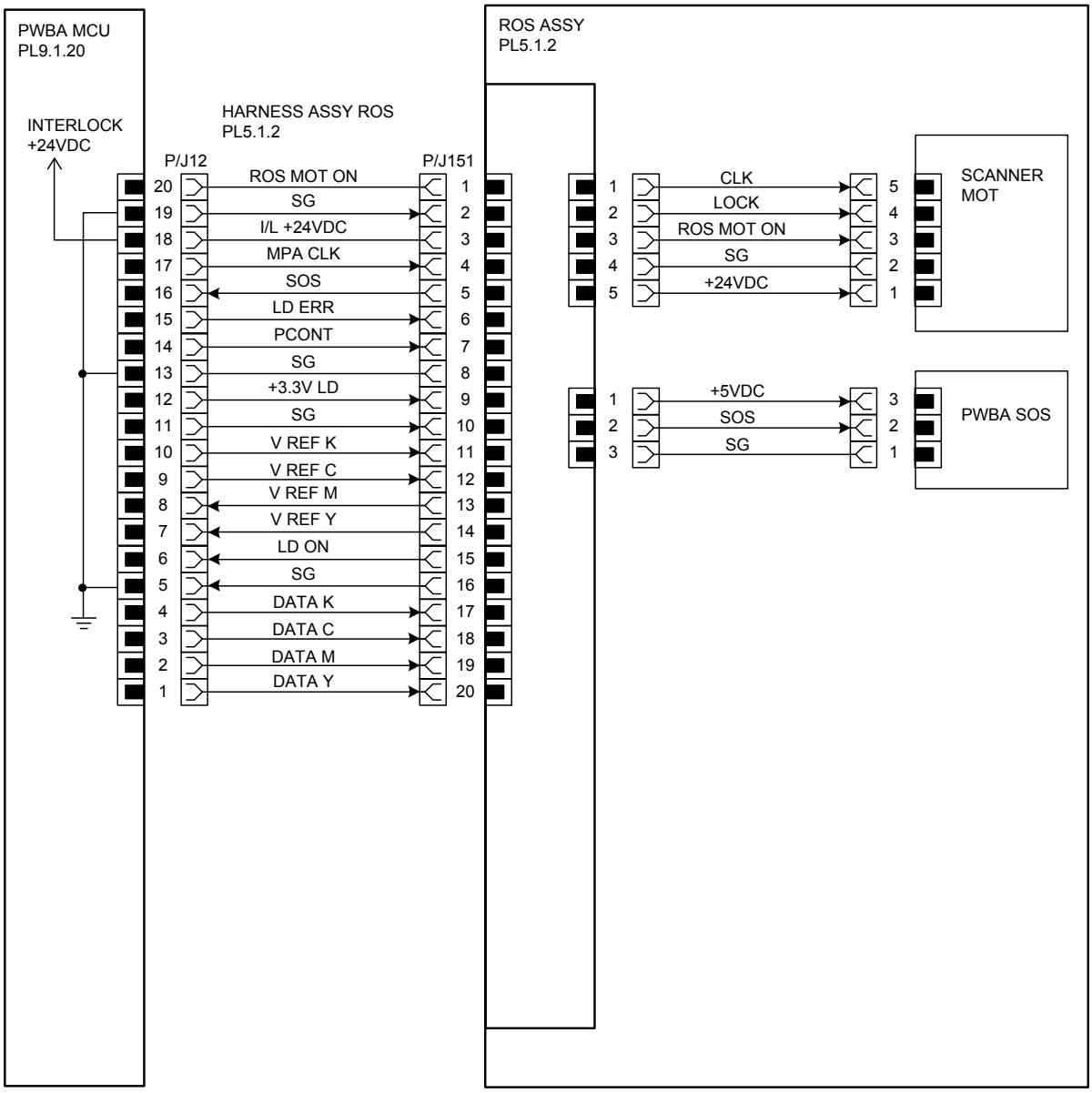
Paper size	Switches		
	SW 1	SW 2	SW 3
LEGAL 14” (SEF)	ON	ON	ON
LEGAL 13” (SEF)	ON	ON	OFF
EXECUTIVE (SEF)	ON	OFF	ON
B5 (SEF)	ON	OFF	OFF
A4 (SEF)	OFF	ON	ON
LETTER (SEF)	OFF	OFF	ON
A5	OFF	ON	OFF
No cassette	OFF	OFF	OFF

ON : The actuator is pushing the size switch.



KMY07014KA

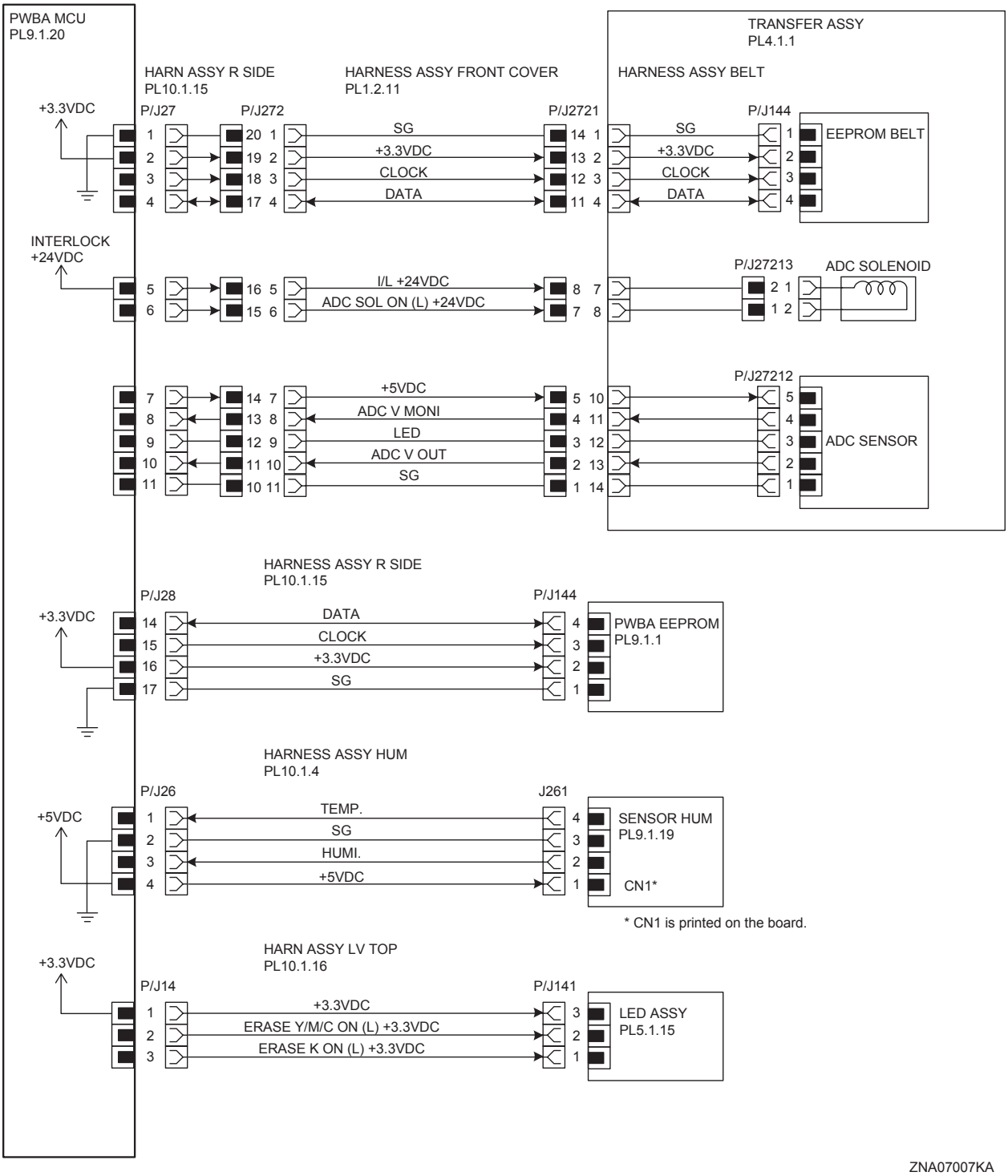
§ 5 ROS



ZNA07006KA

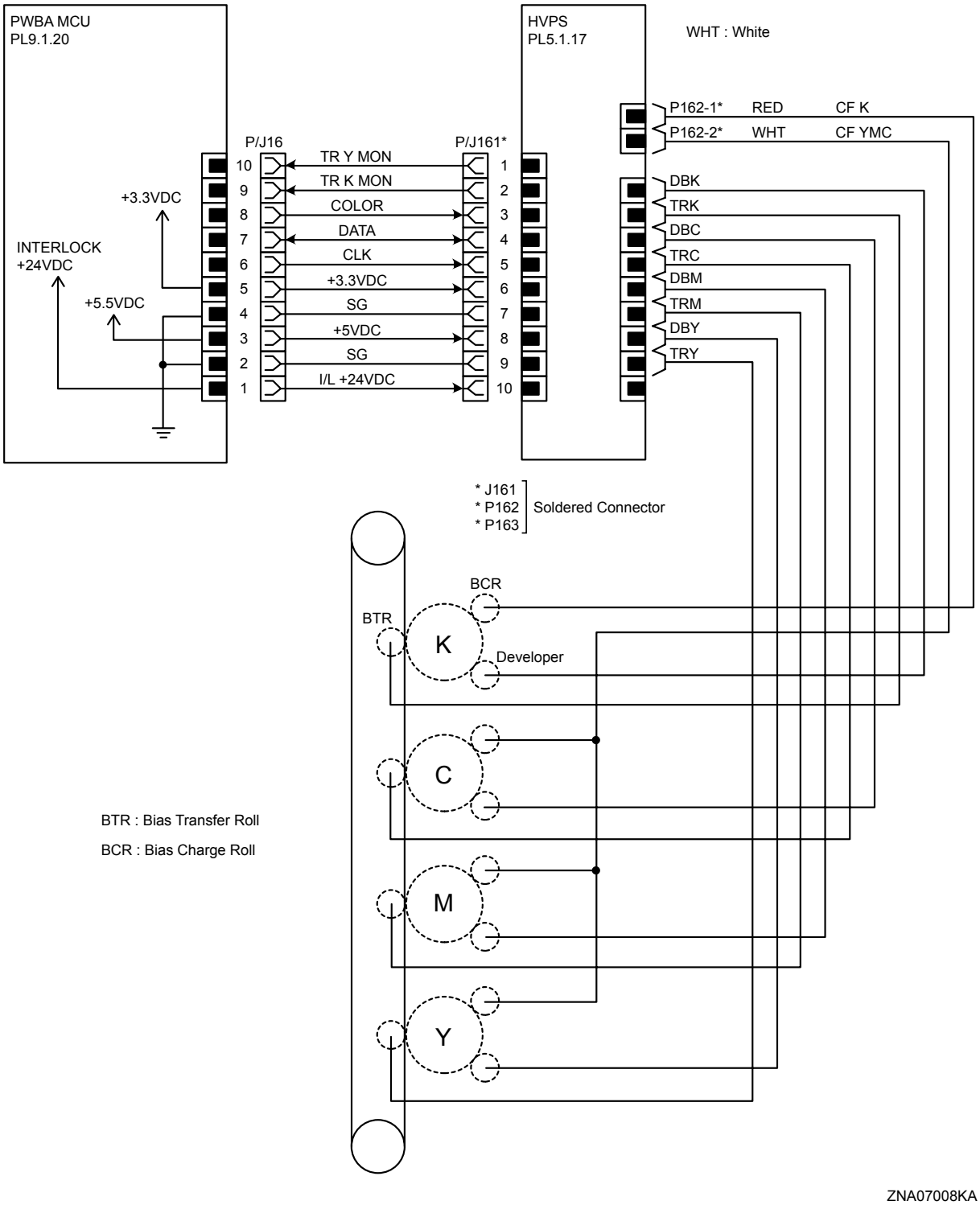
Signal line name	Description
ROS MOT ON	Drive control signal of the ROS MOTOR
SOS	Reference signal for scan start of LASER
V REF K V REF C V REF M V REF Y	Emission control signal of the laser diode
DATA K DATA C DATA M DATA Y	Video signal of the laser diode

§ 6 XEROGRAPHIC



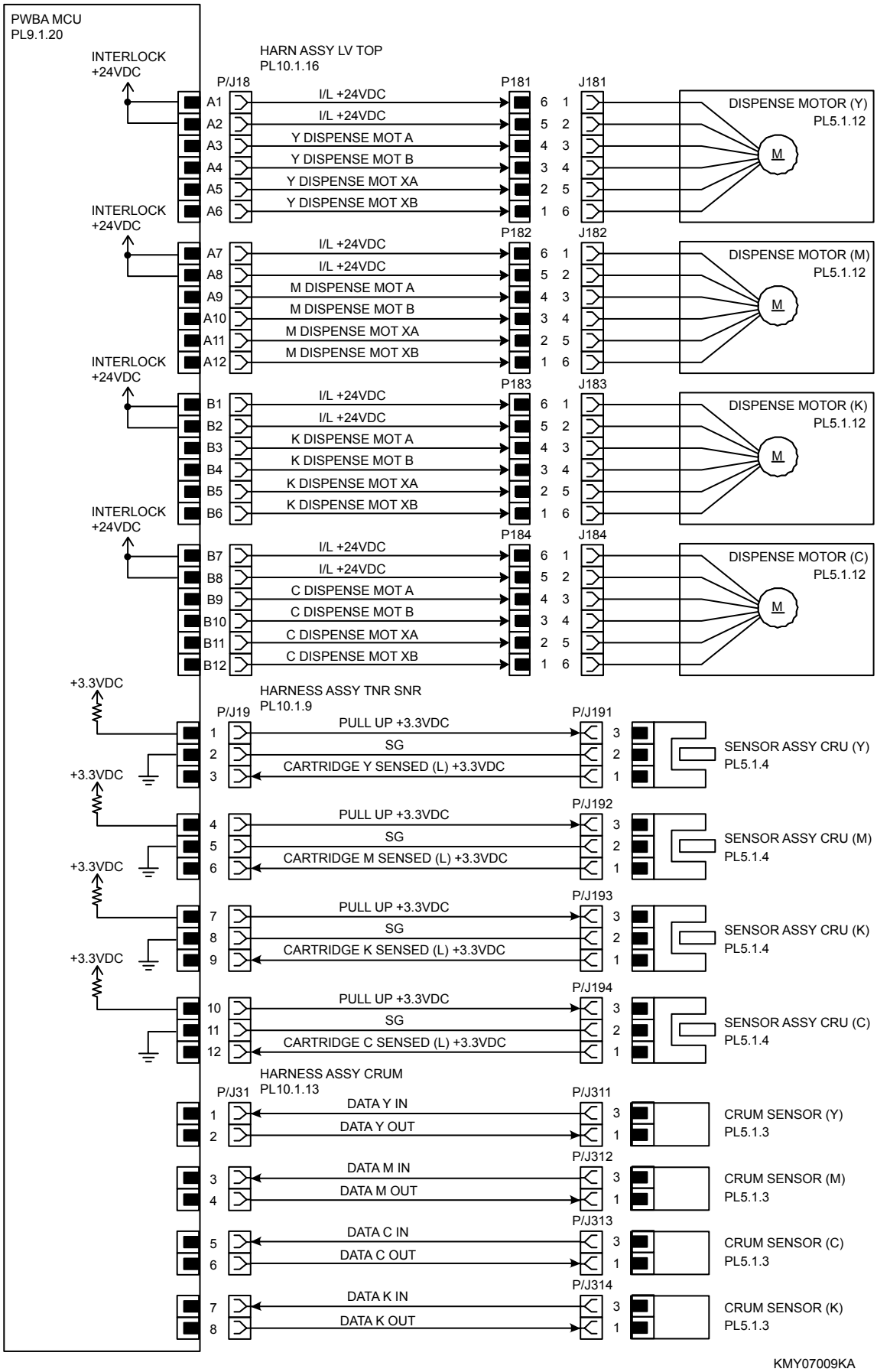
Signal line name	Description
CLOCK DATA	Control signal of the EEPROM BELT
ADC SOL ON (L) +24VDC	ON/OFF signal of the ADC SOLENOID
ADC SENSOR	Toner patch density data measured by the ADC SENSOR (Analog value)
LED REM	Remote signal of the LED of ADC SENSOR
ADC V MONI	Control signal of the ADC SENSOR
DATA CLOCK	Control signal of the EEPROM XPRO
TEMP.	Temperature data in the printer by the TEMP./HUM. SENSOR (Analog value)
HUMI.	Humidity data in the printer by the TEMP./HUM. SENSOR (Analog value)
ERASE K ON (L) +3.3VDC ERASE Y/M/C ON (L) +3.3VDC	ON/OFF signal of the ERASE LAMP

§ 7 HIGH VOLTAGE



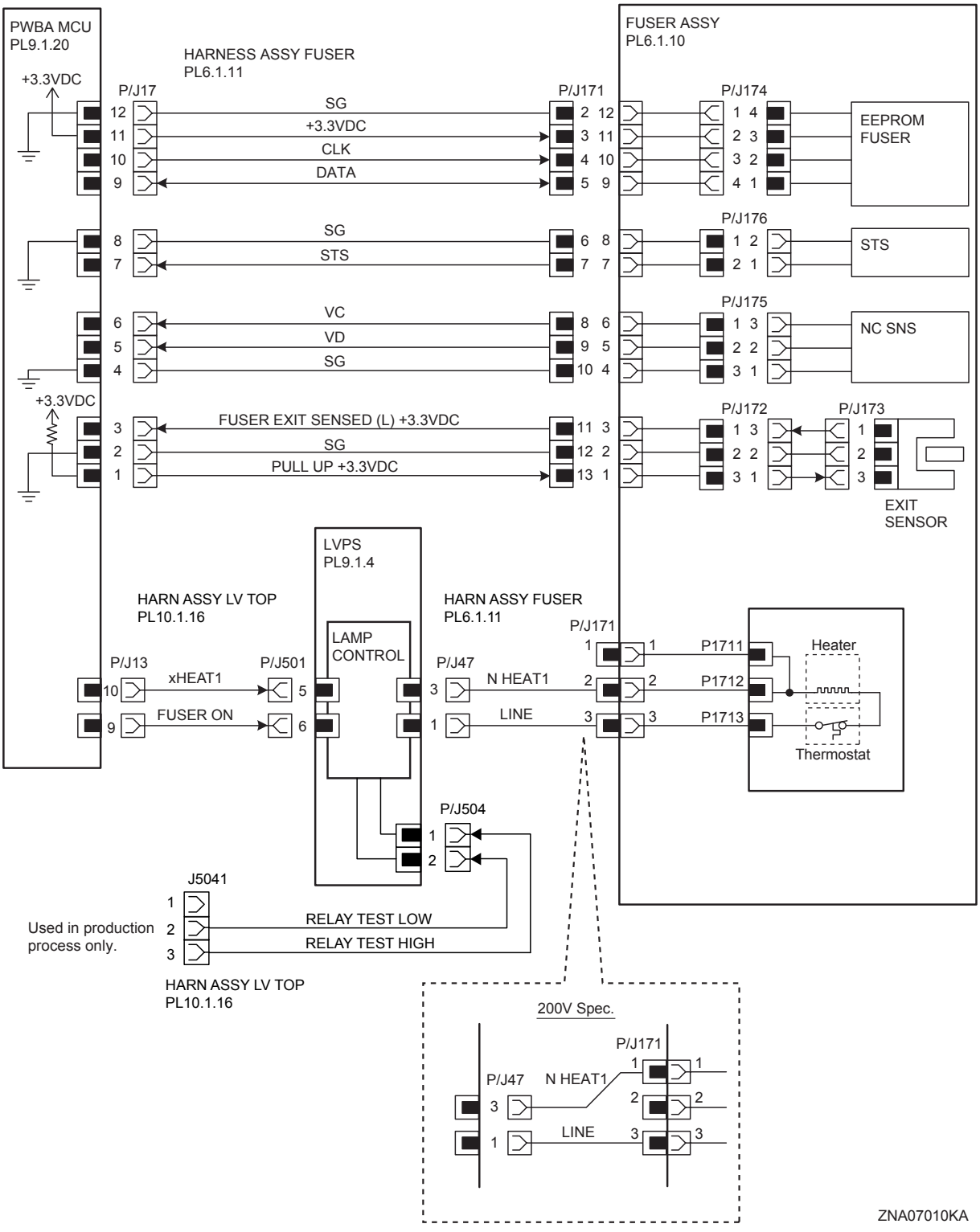
Signal line name	Description
TR Y MON TR K MON COLOR DATA CLK	Control signal of the HVPS

§ 8 DEVELOPER


PWBA MCU
PL9.1.20
INTERLOCK
+24VDC
HARN ASSY LV TOP
PL10.1.16
P/J18
P181
J181
A1
A2
A3
A4
A5
A6
I/L +24VDC
I/L +24VDC
Y DISPENSE MOT A
Y DISPENSE MOT B
Y DISPENSE MOT XA
Y DISPENSE MOT XB
DISPENSE MOTOR (Y)
PL5.1.12
M
P182
J182
A7
A8
A9
A10
A11
A12
M DISPENSE MOT A
M DISPENSE MOT B
M DISPENSE MOT XA
M DISPENSE MOT XB
DISPENSE MOTOR (M)
P183
J183
B1
B2
B3
B4
B5
B6
K DISPENSE MOT A
K DISPENSE MOT B
K DISPENSE MOT XA
K DISPENSE MOT XB
DISPENSE MOTOR (K)
P184
J184
B7
B8
B9
B10
B11
B12
C DISPENSE MOT A
C DISPENSE MOT B
C DISPENSE MOT XA
C DISPENSE MOT XB
DISPENSE MOTOR (C)
+3.3VDC
HARNESS ASSY TNR SNR
PL10.1.9
P/J19
P/J191
PULL UP +3.3VDC
SG
CARTRIDGE Y SENSED (L) +3.3VDC
SENSOR ASSY CRU (Y)
PL5.1.4
P/J192
CARTRIDGE M SENSED (L) +3.3VDC
SENSOR ASSY CRU (M)
P/J193
CARTRIDGE K SENSED (L) +3.3VDC
SENSOR ASSY CRU (K)
P/J194
CARTRIDGE C SENSED (L) +3.3VDC
SENSOR ASSY CRU (C)
HARNESS ASSY CRUM
PL10.1.13
P/J31
P/J311
DATA Y IN
DATA Y OUT
CRUM SENSOR (Y)
PL5.1.3
P/J312
DATA M IN
DATA M OUT
CRUM SENSOR (M)
P/J313
DATA C IN
DATA C OUT
CRUM SENSOR (C)
P/J314
DATA K IN
DATA K OUT
CRUM SENSOR (K)
KMY07009KA

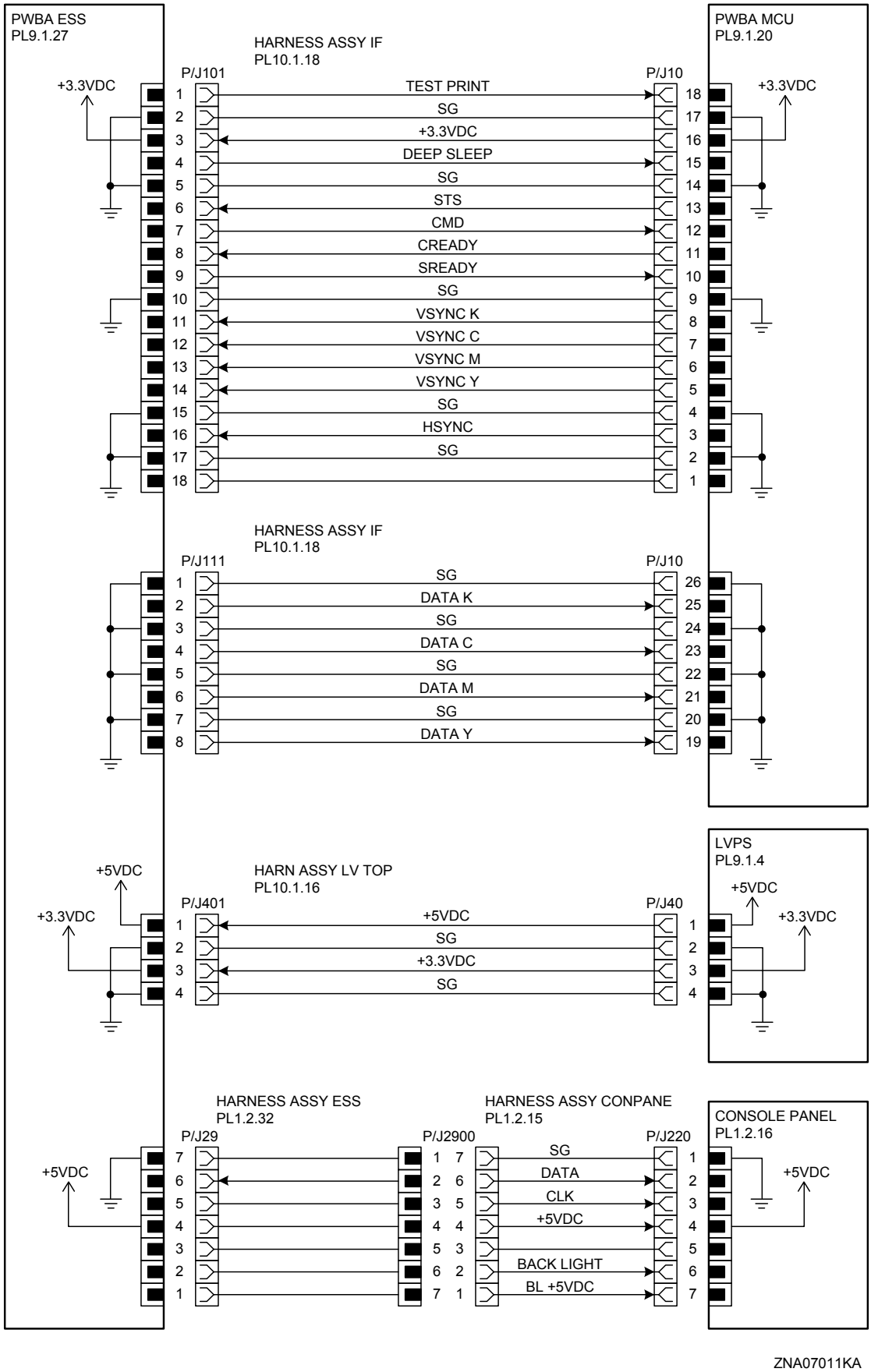
Signal line name	Description
Y DISPENSE MOT A Y DISPENSE MOT B Y DISPENSE MOT XA Y DISPENSE MOT XB	Drive control signal of the DISPENSE MOTOR (Y)
M DISPENSE MOT A M DISPENSE MOT B M DISPENSE MOT XA M DISPENSE MOT XB	Drive control signal of the DISPENSE MOTOR (M)
K DISPENSE MOT A K DISPENSE MOT B K DISPENSE MOT XA K DISPENSE MOT XB	Drive control signal of the DISPENSE MOTOR (K)
C DISPENSE MOT A C DISPENSE MOT B C DISPENSE MOT XA C DISPENSE MOT XB	Drive control signal of the DISPENSE MOTOR (C)
CARTRIDGE Y SENSED (L) +3.3VDC	Detection signal of the CRU SENSOR (Y)
CARTRIDGE M SENSED (L) +3.3VDC	Detection signal of the CRU SENSOR (M)
CARTRIDGE K SENSED (L) +3.3VDC	Detection signal of the CRU SENSOR (K)
CARTRIDGE C SENSED (L) +3.3VDC	Detection signal of the CRU SENSOR (C)
DATA Y IN DATA Y OUT	Control signal of the CRUM SENSOR (Y)
DATA M IN DATA M OUT	Control signal of the CRUM SENSOR (M)
DATA C IN DATA C OUT	Control signal of the CRUM SENSOR (C)
DATA K IN DATA K OUT	Control signal of the CRUM SENSOR (K)

§ 9 FUSER


PWBA MCU
PL9.1.20
+3.3VDC
HARNESS ASSY FUSER
PL6.1.11
P/J17
P/J171
FUSER ASSY
PL6.1.10
P/J174
EEPROM
FUSER
SG
+3.3VDC
CLK
DATA
P/J176
STS
P/J175
NC SNS
VC
VD
FUSER EXIT SENSED (L) +3.3VDC
PULL UP +3.3VDC
P/J172
P/J173
EXIT
SENSOR
LVPS
PL9.1.4
HARN ASSY LV TOP
PL10.1.16
LAMP
CONTROL
HARN ASSY FUSER
PL6.1.11
P/J13
P/J501
P/J47
xHEAT1
FUSER ON
N HEAT1
LINE
P1711
P1712
P1713
Heater
Thermostat
P/J504
J5041
Used in production
process only.
RELAY TEST LOW
RELAY TEST HIGH
HARN ASSY LV TOP
PL10.1.16
200V Spec.
ZNA07010KA

Signal line name	Description
CLK DATA	Control signal of the EEPROM FUSER
STS	Heat Roll surface temperature data measured by Temp. Sensor for detecting high temperature (analog value)
VC VD	Temperature data measured by Temp. Sensor for controlling temperature (analog value)
FUSER EXIT SENSED (L) +3.3VDC	Paper detect signal of the Fuser Exit by the Sensor Photo (EXIT SENSOR)
FUSER ON	Lighting signal of Fuser Lamp
RELAY TEST LOW RELAY TEST HIGH	Test signal of the LVPS (Used in production process only)

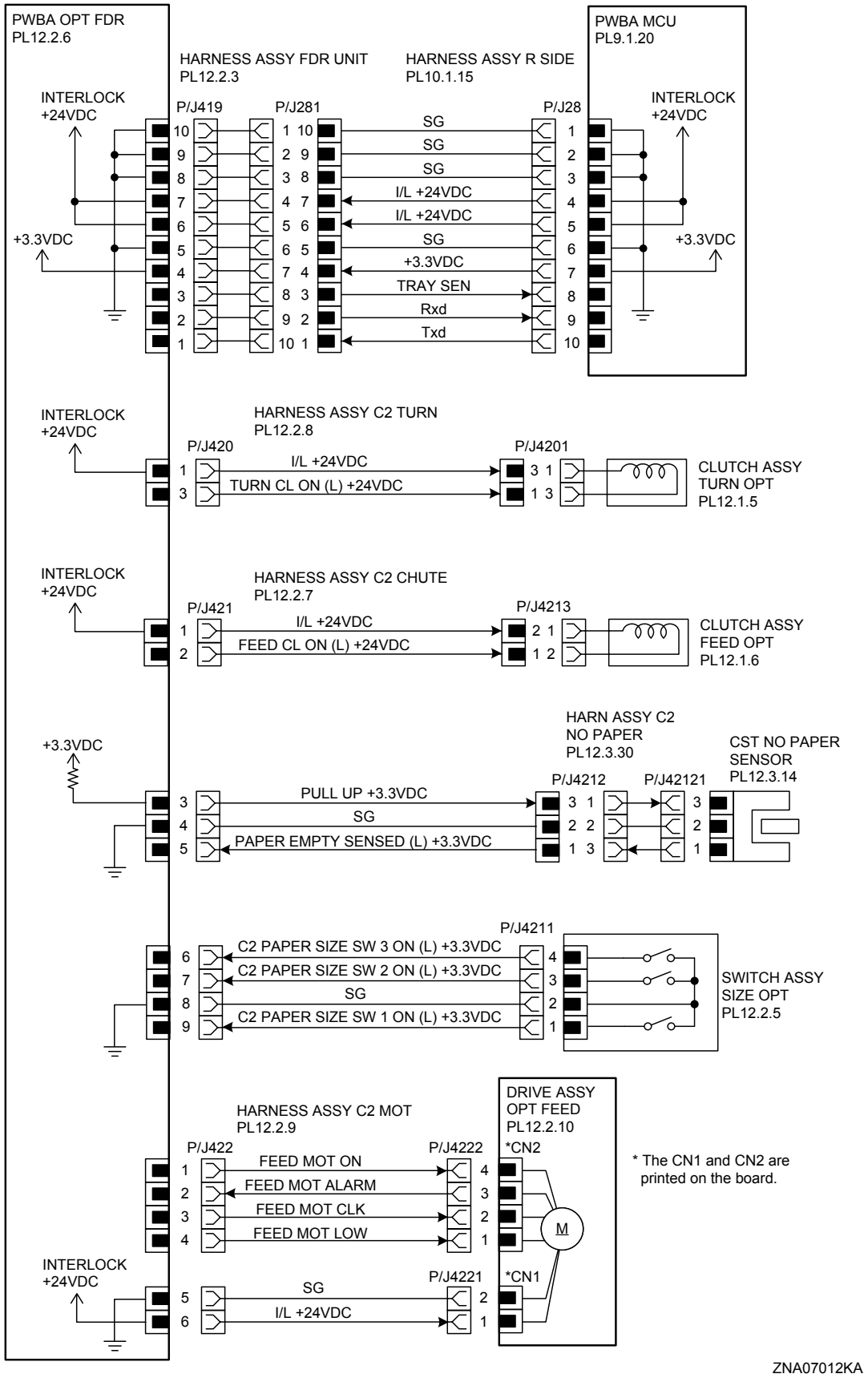
§ 10 CONTROLLER



ZNA07011KA

Signal line name	Description
TEST PRINT	Control signal for the TEST PRINT mode
DEEP SLEEP	Control signal for the DEEP SLEEP mode
STS	Status signal transmitted fro the PWBA MCU to the PWBA ESS
CMD	Command signal transmitted from the PWBA ESS to the PWBA MCU
CREADY SREADY	Signal for indicating weather or not the printer is ready for receiving command signal
VSYNC K VSYNC C VSYNC M VSYNC Y	Signal for indicating registration position of each of images Y, M, C and K
HSYNC	Signal for data
DATA K DATA C DATA M DATA Y	Video data of four colors
DATA CLK BACK LIGHT BL +5VDC	Control signal of the CONTROL PANEL

§ 11 550 FEEDER



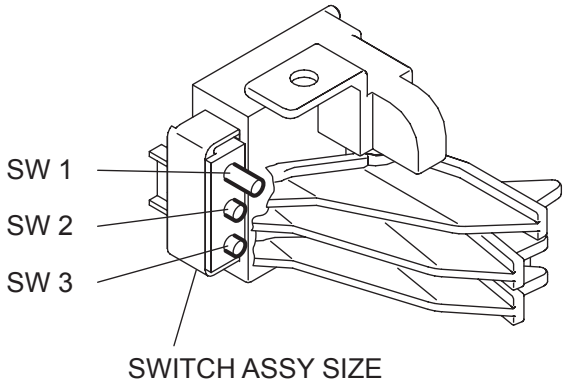
Signal line name	Description
TRAY SEN Rxd Txd	Control signal of the PWBA FEEDER
TURN CL ON (L) +24VDC	ON/OFF signal of the TURN CLUTCH
FEED CL ON (L) +24VDC	ON/OFF signal of the FEED CLUTCH
PAPER EMPTY SENSED (L) +3.3VDC	Paper detect signal of the Feeder by the Sensor Photo (NO PAPER SENSOR)
PAPER SIZE SW 1 ON (L) +3.3VDC PAPER SIZE SW 2 ON (L) +3.3VDC PAPER SIZE SW 3 ON (L) +3.3VDC	ON/OFF signal of the SWITCH ASSY SIZE
FEED MOT ON FEED MOT ALARM FEED MOT CLK FEED MOT LOW	Drive control signal of the FEED MOTOR

- Outline of SWITCH ASSY SIZE

The paper size is determined by a combination of ON/OFF statuses of the SW 1, SW 2, and SW 3 switches of SWITCH ASSY SIZE.

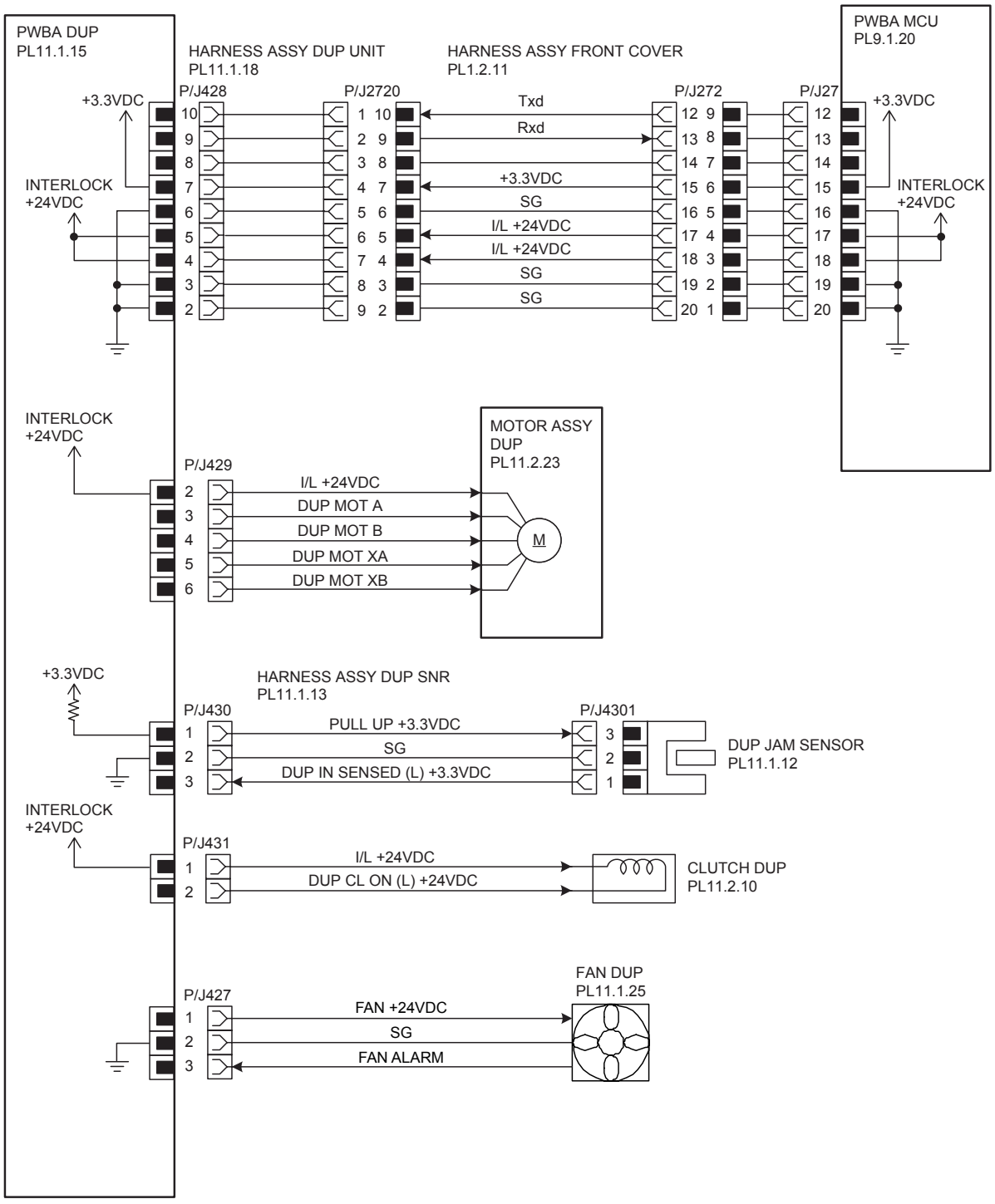
Paper size	Switches		
	SW 1	SW 2	SW 3
LEGAL 14” (SEF)	ON	ON	ON
LEGAL 13” (SEF)	ON	ON	OFF
EXECUTIVE (SEF)	ON	OFF	ON
B5 (SEF)	ON	OFF	OFF
A4 (SEF)	OFF	ON	ON
LETTER (SEF)	OFF	OFF	ON
A5	OFF	ON	OFF
No cassette	OFF	OFF	OFF

ON : The actuator is pushing the size switch.



KMY07014KA

§ 12 DUPLEX



ZNA07013KA

Signal line name	Description
Txd Rxd	Control signal of the PWBA DUP
DUP MOT A DUP MOT B DUP MOT XA DUP MOT XB	Drive control signal of the DUP MOTOR
DUP IN SENSED (L) +3.3VDC	Paper detect signal of the Duplex by the Sensor Photo (DUP JAM SENSOR)
DUP CL ON (L) +24VDC	ON/OFF signal of the DUP CLUTCH
FAN +24VDC FAN ALARM	Drive control signal of the DUP FAN