Legacy Electrical and Cable Specifications

The following electrical documentation is for legacy products JS-20 SR, JS-20 XR, JS-20 WA, and JS-20 DL.

Input Specifications

The encoder output should be either 5V DC push-pull or an open-collector. A differential output (e.g., RS-422) can be converted by using a Crouzet relay (part no. 84130104) or a differential to push-pull converter.

The Start Scan input signal is by default active low—low voltage causes the scanners to start synchronized scanning. However, the `StartScanTriggerOnHigh` parameter reverses this, and causes the scanners to start synchronized scanning when the Start Scan input is high voltage.

12-Wire Pinout

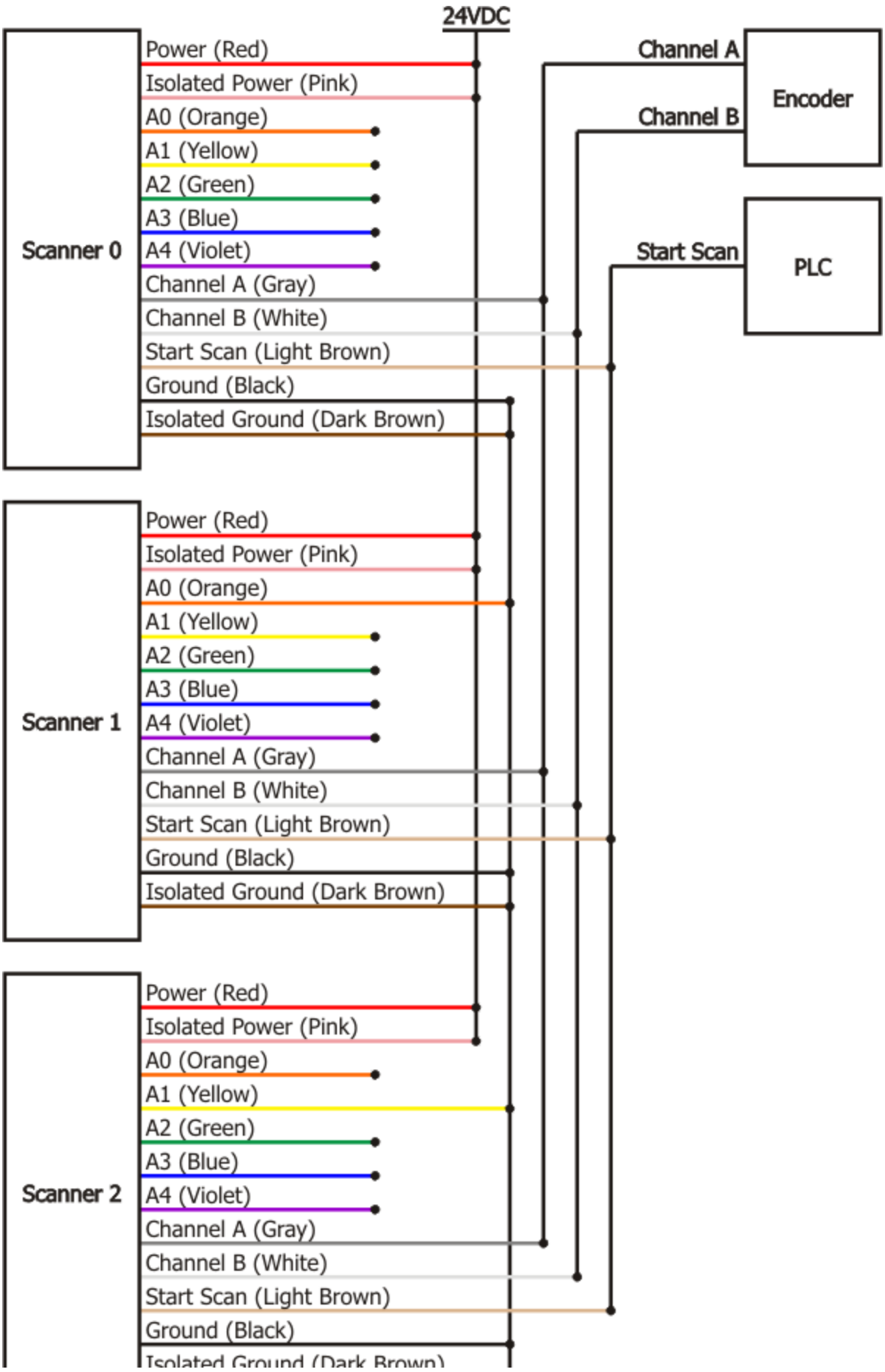
JS-20 scanners are generally connected with our standard 12-wire cable. Belden 9457 or an equivalent cable is suggested.

Table 1. Belden 9457 12-Wire Diagram

Wire Color	DB25 Pin	Function
Red	1	24 VDC / 0.6A
Pink	5	Isolated 12 - 24 VDC
Orange	25	Cable ID - A0
Yellow	12	Cable ID - A1
Green	24	Cable ID - A2
Blue	11	Cable ID - A3
Violet	23	Cable ID - A4
Gray	10	Encoder Channel A
White	22	Encoder Channel B
Light Brown	9	Start Scan
Black	14	Ground
Dark Brown	18	Isolated Ground

Sample Wiring Schematic

The sample wiring diagram below shows how to wire three JS-20 scanners with separate cable IDs. Note how the unused Address wires are simply left unconnected.


24VDC
Scanner 0
Power (Red)
Isolated Power (Pink)
A0 (Orange)
A1 (Yellow)
A2 (Green)
A3 (Blue)
A4 (Violet)
Channel A (Gray)
Channel B (White)
Start Scan (Light Brown)
Ground (Black)
Isolated Ground (Dark Brown)
Scanner 1
Power (Red)
Isolated Power (Pink)
A0 (Orange)
A1 (Yellow)
A2 (Green)
A3 (Blue)
A4 (Violet)
Channel A (Gray)
Channel B (White)
Start Scan (Light Brown)
Ground (Black)
Isolated Ground (Dark Brown)
Scanner 2
Power (Red)
Isolated Power (Pink)
A0 (Orange)
A1 (Yellow)
A2 (Green)
A3 (Blue)
A4 (Violet)
Channel A (Gray)
Channel B (White)
Start Scan (Light Brown)
Ground (Black)
Isolated Ground (Dark Brown)
Channel A
Channel B
Encoder
Start Scan
PLC

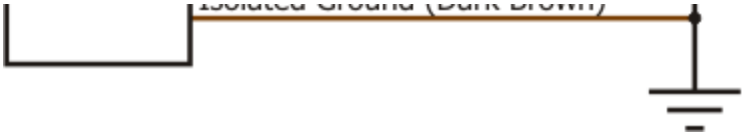


Figure 1. Sample wiring diagram for three JS-20 scanners with separate cable IDs

15-Wire Pinout

In some applications, you may want a signal when the lasers are on. For these applications, we supply a 15-wire cable with a Laser On output, which is pulled low when the laser is on. Belden 8458 or an equivalent cable is suggested.

This is an extremely uncommon type of wire for the JS-20s.

Table 2. Belden 8458 15-Wire Diagram

Wire Color	DB25 Pin	Function
Red	1	24 VDC / 0.6A
Black	14	Ground
Red/White	5	Isolated 12 - 24 VDC
Black/White	18	Isolated Ground
Orange/Black	25	Cable ID - A0
Green/Black	12	Cable ID - A1
Red/Black	24	Cable ID - A2
White/Black	11	Cable ID - A3
Blue	23	Cable ID - A4
White	9	Start Scan
Orange	10	Encoder Channel A
Green	22	Encoder Channel B
Blue/Black	20	Laser 0 Output
Green/White	7	Laser 1 Output
Blue/White	19	Alternate Output (leave unconnected)

Cable ID Wiring

The A0 through A4 wires are used to give each cable a unique Cable ID number. Instead of having to manually configure a scanner's location, a JS-20 configures itself according to the Cable ID that supplies power to the scanner. To set a Cable ID, pull specific Cable ID wires A0 through A4 to the isolated ground. The remaining wires should be left unconnected. The table below gives the wiring for all 32 possible addresses.

U = Unconnected

G = Grounded

Table 3. Cable ID Termination Table

Cable ID	A4	A3	A2	A1	A0
0	U	U	U	U	U
1	U	U	U	U	G
2	U	U	U	G	U

3	U	U	U	G	G
4	U	U	G	U	U
5	U	U	G	U	G
6	U	U	G	G	U
7	U	U	G	G	G
8	U	G	U	U	U
9	U	G	U	U	G
10	U	G	U	G	U
11	U	G	U	G	G
12	U	G	G	U	U
13	U	G	G	U	G
14	U	G	G	G	U
15	U	G	G	G	G
16	G	U	U	U	U
17	G	U	U	U	G
18	G	U	U	G	U
19	G	U	U	G	G
20	G	U	G	U	U
21	G	U	G	U	G
22	G	U	G	G	U
23	G	U	G	G	G
24	G	G	U	U	U
25	G	G	U	U	G
26	G	G	U	G	U
27	G	G	U	G	G
28	G	G	G	U	U
29	G	G	G	U	G
30	G	G	G	G	U
31	G	G	G	G	G