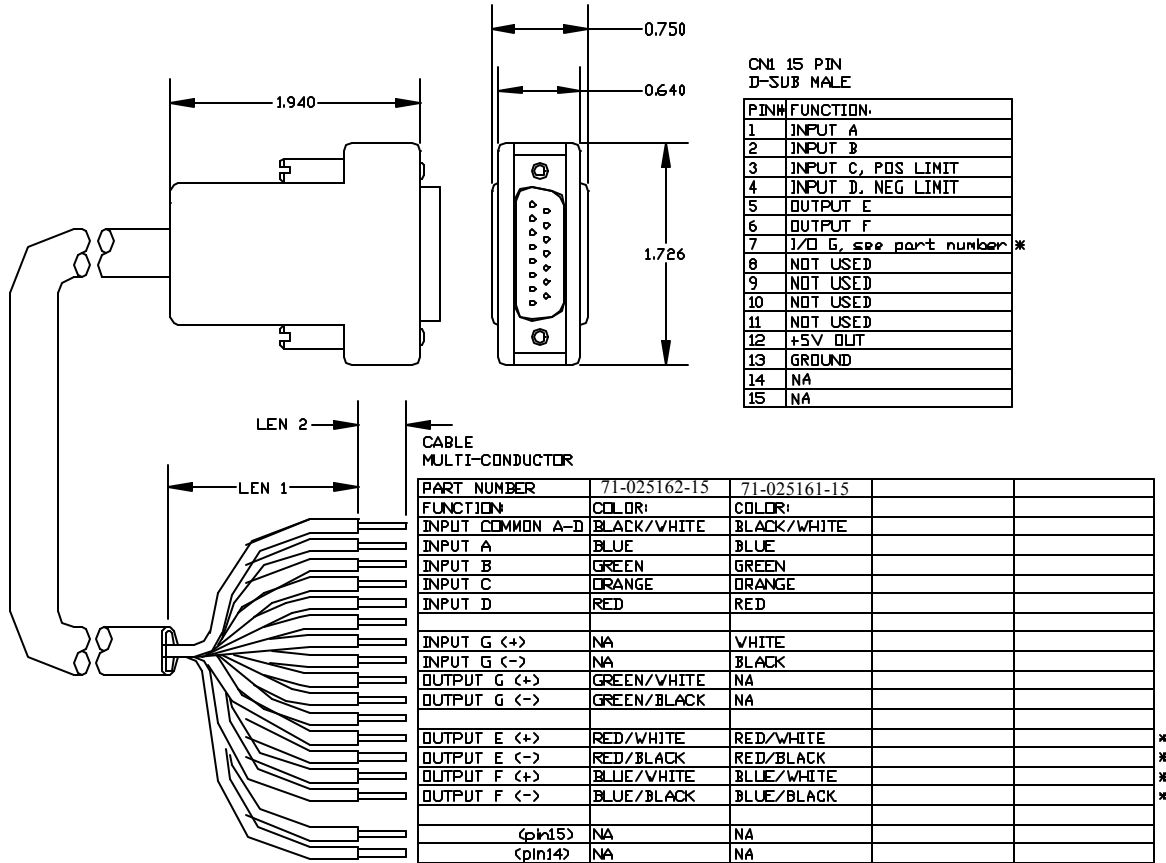


71-025161-15 and 71-025162-15 User's Manual

Overview

The 71-025161-15 and 71-025162-15 are cables with a DB15 connector that converts 5VDC iSeries I/O to 24VDC I/O. The user will specify the part number for a cable with either four digital inputs and three digital outputs (71-025162-15) or five digital inputs and two digital outputs (71-025161-15).

This cable connects directly into the iSeries DB 15 I/O connector



ALL I/Os ARE DIODE PROTECTED, ISOLATED AND 24 VOLT OUTPUTS SINK OR SOURCE AS MUCH AS 100mA EACH.

TYPICAL OUTPUT CONNECTION PUTS COMMON TO GROUND, THE OUTPUT TO ONE LEG OF THE DEVICE WITH THE OTHER LEG TO 24 VOLTS. SOURCING WORKS TOO.

INPUT COMMON CAN BE CONNECTED TO +24V OR GND. INPUTS ARE TRIGGERED WITH PLUS OR MINUS 24V BETWEEN THEM AND THE INPUT COMMON.

*PORT G IS ONLY USED AS INPUT FOR CABLE WITH PART NUMBER 71-025161-15

*PORT G IS ONLY USED AS OUTPUT FOR CABLE WITH PART NUMBER 71-025162-15

INPUT CANNOT BE USED IF IT EXCEEDS 30 VOLTS 8mA.

OUTPUT CANNOT BE USED IF IT EXCEEDS 30 VOLTS 100mA.

| PART NUMBER | | LEN 1 | LEN 2 |
|--------------|--------------|-------|--------|
| 71-025161-15 | 5m (16.4 ft) | 3 in | 0.5 in |
| 71-025162-15 | | | |

MULTI-CONDUCTOR HOOD COLOR: BLACK
 JACKET COLOR: GRAY
 CONDUCTOR: 20-26 AWG

Inputs A to D can be set to either all sourcing or sinking inputs. Port G input is independent from input A to D. Outputs E, F, and G are wired independently so they can either be sourcing or sinking.

RATING:

| | | |
|--------|--------------|--------|
| Input | min. voltage | 24 VDC |
| | max. voltage | 30 VDC |
| | min. current | 5 mA |
| | max. current | 8 mA |
| Output | | |
| | max. voltage | 30 Vdc |
| | max. current | 100 mA |

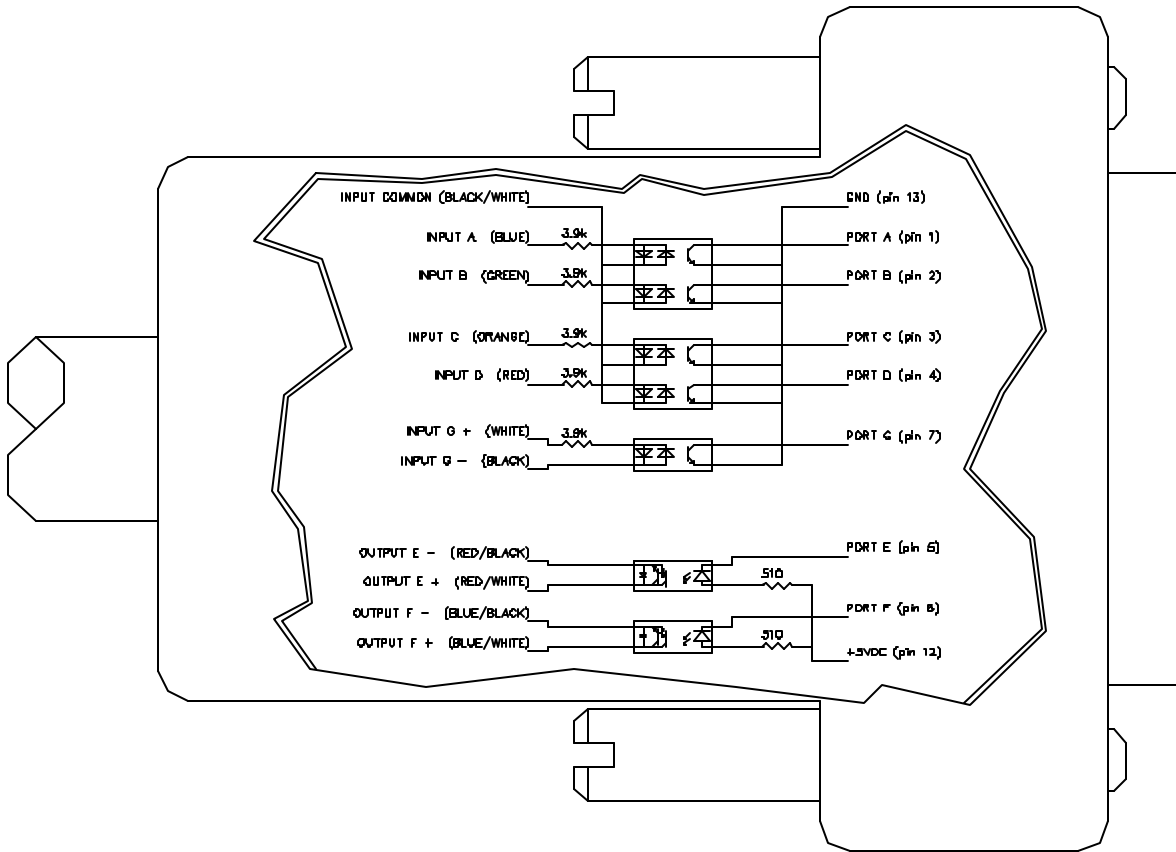
Damage may occur if these maximum ratings are exceeded.

iSeries Interface

The 71-025161-15 and 71-025162-15 cables use the following I/O pins on the iSeries as listed:

| PIN | SIGNAL | DESCRIPTION |
|-----|----------------|---|
| 1 | input A | Digital input A / Encoder input A / Step input (input frequency 50kHz) |
| 2 | input B | Digital input B / Encoder input B / Direction input (input frequency 50kHz) |
| 3 | input C | Digital input C / Positive Limit |
| 4 | input D | Digital input D / Negative Limit |
| 5 | output E | Digital output E |
| 6 | output F | Digital output F |
| 7 | input/output G | Digital input G ONLY for 71-025161-15 Digital output G ONLY for 71-025162-15 |
| | | |
| 12 | +5Vdc | +5Vdc output |
| 13 | GND | Signal Ground |
| 14 | N/A | N/A |
| 15 | N/A | N/A |

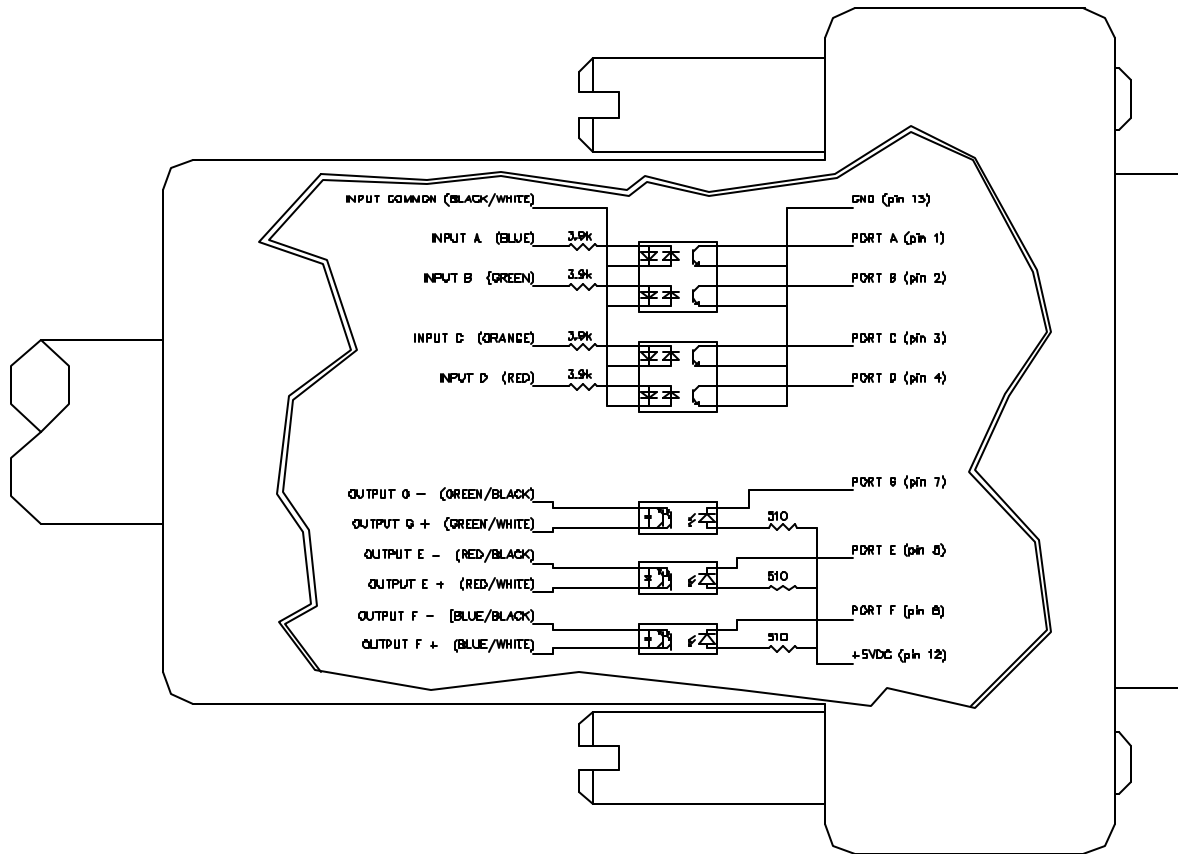
71-025161-15 Schematic



CABLE
MULTI-CONDUCTOR

| | |
|------------------|--------------|
| PART NUMBER | 71-025161-15 |
| FUNCTION: | COLOR: |
| INPUT COMMON A-D | BLACK/WHITE |
| INPUT A | BLUE |
| INPUT B | GREEN |
| INPUT C | ORANGE |
| INPUT D | RED |
| | |
| INPUT G (+) | WHITE |
| INPUT G (-) | BLACK |
| OUTPUT G (+) | NA |
| OUTPUT G (-) | NA |
| | |
| OUTPUT E (+) | RED/WHITE |
| OUTPUT E (-) | RED/BLACK |
| OUTPUT F (+) | BLUE/WHITE |
| OUTPUT F (-) | BLUE/BLACK |

71-025162-15 Schematic



CABLE
MULTI-CONDUCTOR

| | |
|------------------|--------------|
| PART NUMBER | 71-025162-15 |
| FUNCTION: | COLOR: |
| INPUT COMMON A-D | BLACK/WHITE |
| INPUT A | BLUE |
| INPUT B | GREEN |
| INPUT C | ORANGE |
| INPUT D | RED |
| INPUT G (+) | NA |
| INPUT G (-) | NA |
| OUTPUT G (+) | GREEN/WHITE |
| OUTPUT G (-) | GREEN/BLACK |
| OUTPUT E (+) | RED/WHITE |
| OUTPUT E (-) | RED/BLACK |
| OUTPUT F (+) | BLUE/WHITE |
| OUTPUT F (-) | BLUE/BLACK |

You probably noticed that the motor is reading the signal low when high signal is being sent to the cable. If you prefer the motor to read a high signal when high signal is being sent to the cable, you can mask the input value by using the following command:

```
a=UAI==0          `this sets a to 1 if UAI is true, which in this case if UAI is 0
                  `
                  (low)
```

I/O Commands:

```
UAI      `initialize port A as input
UBI      `initialize port B as input
UCI      `initialize port C as input
UDI      `initialize port D as input
UCP      `initialize port C as Right Limit (Port C is right limit by default)
UDM      `initialize port D as Left Limit (Port D is left limit by default)
UGI      `initialize port G as input (port G can only be used as either
UGO      `initialize port G as output□ □ □ input or output)
UG=1     `set output G off (output line open)
UG=0     `set output G on (output line close)
UEO      `initialize port E as output
UE=1     `set output E off (output line open)
UE=0     `set output E on (output line close)
UFO      `initialize port F as output
UF=1     `set output F off (output line open)
UF=0     `set output F on (output line close)

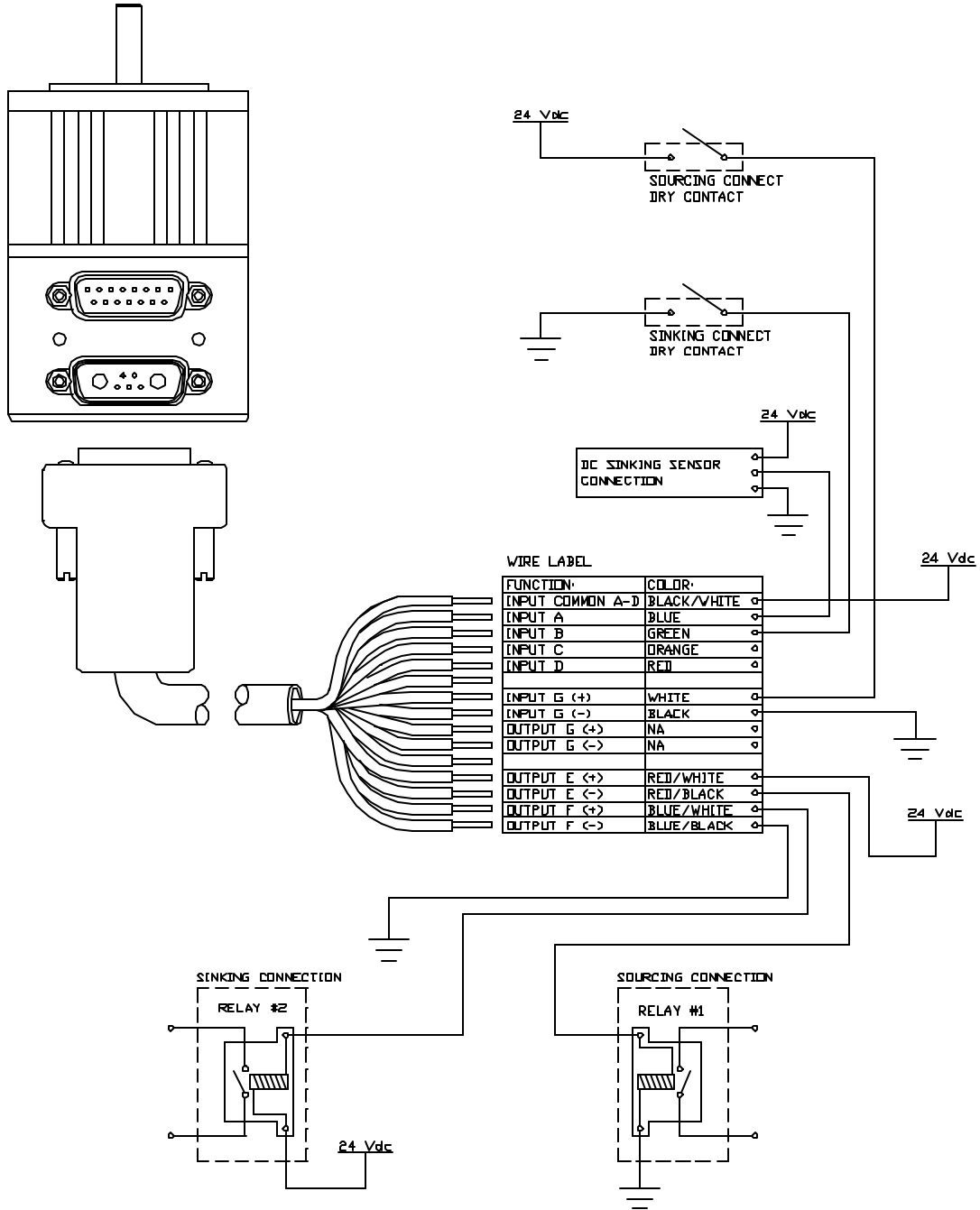
d=UCI    `store the input state value of port C into variable d

IF UAI   `using with IF statement, true => UAI is 1
ENDIF

IF UAI==0 `using with IF statement, true => UAI is 0
ENDIF
```

Sample Wiring Diagram:

Using 71-025161-15



For further details about I/O commands and program flows, please refer to the iSeries Users Guide.