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For information on this product and other Bray products, please visit us at our web page - www.bray.com
SAFETY INSTRUCTIONS - DEFINITION OF TERMS

READ AND FOLLOW THESE INSTRUCTIONS
SAVE THESE INSTRUCTIONS

| WARNING | indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. |
| CAUTION | indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. |
| NOTICE | used without the safety alert symbol indicates a potential situation which, if not avoided, may result in an undesirable result or state, including property damage. |

1.1 HAZARD-FREE USE

This device left the factory in proper condition to be safely installed and operated in a hazard-free manner. The notes and warnings in this document must be observed by the user if this safe condition is to be maintained and hazard-free operation of the device assured.

Take all necessary precautions to prevent damage to the valve status monitor due to rough handling, impact, or improper storage. Do not use abrasive compounds to clean the actuator, or scrape metal surfaces with any objects.

The control systems in which the valve status monitor is installed must have proper safeguards to prevent injury to personnel, or damage to equipment, should failure of system components occur.

1.2 QUALIFIED PERSONNEL

A qualified person in terms of this document is one who is familiar with the installation, commissioning and operation of the device and who has appropriate qualifications, such as:

- Is trained or authorized to energize, de-energize, ground, tag and lock electrical circuits and equipment in accordance with established safety practices
- Is trained in the proper use and care of personal protective equipment (PPE) in accordance with established safety practices
- Is trained in first aid
- In cases where the device is installed in a potentially explosive (hazardous) location – is trained in the operation, commissioning, operation and maintenance of equipment in hazardous locations

WARNING

The valve status monitor must only be installed, commissioned, and operated by qualified personnel. The device generates large mechanical force during normal operation. All installation, commissioning, operation and maintenance must be performed under strict observation of all applicable codes, standards and safety regulations. Reference is specifically made here to observe all applicable safety regulations for actuators installed in potentially explosive (hazardous) locations.
The following instructions apply to the Bray International S52 2N1ProxSensor Valve Status Monitors Part nos. 52100*-71114536 (*= 1, 2, 4, 6, 7, 8, and 9) covered by certificate number Sira 11ATEX4135X. Translations into other languages are available on request.

1. The equipment may be used with flammable gases and vapours with apparatus Gas Groups IIA, IIB and IIC in Zone 2 locations, and Dust Group IIIB in zone 22 locations.
2. The equipment Temperature Class is T4 for gases and T102°C for dusts, and is only certified for use in ambient temperatures in the range -20°C to +70°C and should not be used outside this range.
3. Installation shall be carried out in accordance with the applicable code of practice by suitably-trained personnel.
4. Repair of this equipment shall be carried out in accordance with the applicable code of practice.
5. The X suffix to the certificate number is to indicate that there is a special condition for safe use, which is regarding the potential build up of static electricity and the precautions to be taken, some of the sensors must be protected from impact/mechanical damage.
6. If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.

Aggressive substances - e.g. acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials.

Suitable precautions - e.g. regular checks as part of routine inspections or establishing from the material’s data sheet that it is resistant to specific chemicals.

Copy of Certificate number Sira 11ATEX4135X
1  EC TYPE-EXAMINATION CERTIFICATE
3  Certificate Number: Sira 11ATEX2134X  Issue: 0
4  Equipment: Series 52 2N1ProxSensor Valve Status Monitor
5  Applicant: Bray International
6  Address: 13333 Westland East Boulevard
        Houston
        Texas, 77041
        USA
7  This equipment and any acceptable variation thereto is specified in the schedule to this certificate and
the documents therein referred to.
8  Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC
of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and
Safety Requirements relating to the design and construction of equipment intended for use in
potentially explosive atmospheres given in Annex II to the Directive.
    The examination and test results are recorded in the confidential reports listed in Section 14.2.
9  Compliance with the Essential Health and Safety Requirements, with the exception of those listed in
the schedule to this certificate, has been assured by compliance with the following documents:
EN 60079-0:2009 (used for guidance in respect of marking)
10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special
conditions for safe use specified in the schedule to this certificate.
11 This EC type-examination certificate relates only to the design and construction of the specified
equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of
this equipment.
12 The marking of the equipment shall include the following:
   Ex
II 1 G D
Ex ia IIC T4 Ga Ta = -20°C to +70°C
Ex iaD 20 T135°C Da

D R Stubbings BA MIET
Certification Manager

Sira Certification Service
Rake Lane, Eccleston, Chester, CH4 9JN, England
Tel: +44 (0) 1244 670900
Fax: +44 (0) 1244 681330
Email: info@siracertification.com
Web: www.siracertification.com
1 **TYPE EXAMINATION CERTIFICATE**


3 Certificate Number: Sira 11ATEX4135X Issue: 0

4 Equipment: Series 52 2N1ProxSensor Valve Status Monitors

5 Applicant: Bray International

6 Address: 13333 Westland East Boulevard Houston Texas, 77041 USA

7 This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of Category 3 equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to European Union Directive 94/9/EC of 23 March 1994.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:


10 If the sign “X” is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design of the specified equipment, and not to specific items of equipment subsequently manufactured.

12 The marking of the equipment shall include the following:

\[Ex\]

II 3 G D

Ex nA IIC T4 Gc Ta = -20°C to +70°C

Ex tc IIIB T102°C Dc
Introduction

Note: The following information is intended to assist individuals with the use and support of the Bray S52 Valve Status Monitors.

The Series 52 Valve Status Monitor has been designed to provide valve position indication. The 2N1TM ProxSensor is available in several configurations:

- DC Version 10-30VDC PNP (Sourcing)
- DC Version 10-30VDC NPN (Sinking)
- DC NAMUR Intrinsically Safe Version (to be used with IS Barrier)
- AC Version 20-250VAC, 50-60Hz
- Fieldbus capable Versions
  1. AS-i (Actuator Sensor Interface)
  2. DeviceNet
  3. PROFIBUS DP (Process Fieldbus Decentralized Peripherals)

Each of these configurations will be covered in more detail on the pages that follow. Additionally, examples of how to apply some of these products will be given.

All Bray S52 Valve Status Monitors utilize solid state switches. Although the solid state switch performs the same function as a conventional mechanical switch, there are differences in the way solid state switches operate.

NOTICE

It is very important for the user to pay close attention to the exact specifications of their sensor in order to avoid damaging the unit.

Solid state switches have current restrictions imposed by the semi conducting materials used to form the sensor. These current limitations have to be accounted for during setup. Unlike mechanical switches, which can normally handle several amperes of current flowing through them, solid state switches are generally rated for half an ampere or less.

NOTICE

The Parameters of the S52 must be compatible with the application

When working with the S52, several parameters must be considered. A few of which (with significant importance) are listed here: operating voltage, maximum switching current, output voltage drop, and residual current. Using an S52 outside of these parameter limits can cause damage to the unit and void factory warranty.

Operating voltage is the amount of voltage necessary for the sensor to operate. The maximum switching current is the largest amount of current that the sensor’s solid state electronics can have flowing through them in the On-State (when the target is in proximity of the sensor). During commissioning, it is up to the user to correctly apply the sensor to their control system in order to limit the current flowing through the device. This is done through the use of a load; all the wiring diagrams associated with the S52s specify where this load needs to be placed in the circuit. Common control systems utilize a digital input card to monitor devices like the S52; these cards have loads (parameter usually referred to as “input impedance”) – it is the responsibility of the user to ensure that this load is sufficiently sized to limit the current flowing through the S52 below the maximum switching current, yet above the On-State input current minimum of their monitoring device. We will cover an example of this on page 14-15.

Output voltage drop is defined as the amount of voltage that will drop across the solid state switch. This voltage drop will often vary with the amount of current flowing through the sensor and the load.
This drop in voltage becomes paramount when connecting several valve status monitors in series, each unit will have a voltage drop across it – adding each subsequent drop and subtracting from the supply voltage yields the resulting voltage at the end of the series connection. The user needs to ensure that the supply voltage is large enough so that the resulting voltage after all the drops is above the min. operating voltage of the last S52 in the series connection. Sensors located a great distance from the load require consideration as well, as a general rule, every 1000 ft. of wire will have a resistance of 10Ω (see electrical code references for the resistance value of specific wire sizes), it is important for the customer to ensure that the distance between the S52 and the control panel is not long enough to cause the voltage drop to fall below the minimum operating voltage of the sensor.

Residual current is often referred to as leakage current. In the “Off” state (target is NOT in proximity of the sensor) the sensor draws a small amount of current in order to power the device’s electronics. This is necessary for the device to sense the target at any point in time when the supply voltage is applied. It is important that this residual current is below the maximum Off-State current rating of the control system.

Target Mounting

All configurations of the S52 are offered with two types of targets; adjustable and non-adjustable. Standard S52 (AC, DC, and DC Intrinsically Safe units) utilize inductive proximity sensing technology to provide valve position indication; the fieldbus capable versions utilize hall effect sensing technology to accomplish the same objective. When applying fieldbus capable S52s, the same targets are used; however, small magnets are located in the small chambers behind the metal inserts on the sides of the targets.

Adjustable Target Mounting

The adjustable versions are for customers that want the flexibility to position their indication limits outside of the standard 0 to 90°. The components that come in the adjustable target kit are displayed in Figure 1. Figure 2 shows the components of the High Visibility Indicator Kit and the adjustable target kit.

**Figure 1:** Adjustable Target Kit. From Left to Right: (1) S52 Mounting Screws, (2) Base, (3) Middle Piece, (4) Top. (5) Yellow Pointer w/ mounting screw

**Figure 2:** High visibility indicator with adjustable target. Pictured from left to right: (1) Indicator cover w/mounting screws, (2) indicator w/mounting screw, and (3) adjustable target.
The steps required to set up the adjustable target for your S52 2N1 Valve Status Monitor:

**Step 1:** Place the base on top of your pneumatic actuator’s output pinion.

**Step 2:** Place the middle piece on top of the base so that the metal target is in front of where the bottom switch (labeled 2) of the S52 will be located.

**Step 3:** Place the top piece so that the metal target will be directly in front of the top switch (labeled 1) on the S52 when the actuator rotates to its opposite end of travel position. If you have a high visibility indicator kit, jump to step 5 - otherwise proceed to step 4.

**Step 4:** Place the yellow pointer in your desired orientation and tighten the mounting screw. Note: Units assembled at the factory will have yellow pointers in line with valve discs.

**Step 5:** Mount the high visibility beacon on top of the target to display ‘Open’ and ‘Closed’ according to your actuator/valve mounting orientation.

**Step 6:** Tighten the mounting screw to ensure that your indicator and target are secured to the pinion of the actuator. Note: damage to the indicator can result from over tightening the screw.
Step 7: Place the S52 on the actuator, aligning the holes in the sensor with the mounting holes of the actuator. Insert the cover over the indicator and align the mounting holes of the cover with those of the sensor. Use the longer mounting bolts supplied with your kit and tighten the cover and sensor to the actuator.

Non-Adjustable Target Mounting

The S52 Valve Status Monitor is offered with a non-adjustable target. The non-adjustable target is a one piece puck style target with metal inserts offset by 90°. The yellow pointer however is adjustable and can be positioned however you require; when the unit is mounted at the factory the pointer will be in line with the valve disc. All components of the non-adjustable kit are shown below in Figure 3. The procedure for mounting the non-adjustable target is described on the next page. Note: when configuring this target with your input monitoring device pay close attention to metal insert position versus sensor position as your actuator rotates from open to close.

Mounting of the non-adjustable target:

Insert the target on the pinion of the pneumatic actuator. Based on what position your pinion/actuator is in, one of the metal inserts of the target will be directly in front of switch ‘1’ or switch ‘2’ on your sensor. When your quarter turn actuator rotates 90° to its opposite travel limit, the other metal insert of the target will be directly in front of switch ‘2’ or switch ‘1’, respectively. Position your actuator to yield your desired indication results.
The Standard S52 (non fieldbus capable versions) are offered with two types of connections; the DC versions are offered with a 4-pin M12 connection, and the AC versions are offered with a 5-pin 7/8” connection. Both types are pictured below:

![4-pin M12 Connector and 5-pin 7/8” Connector](image)

Figure 5: Standard S52 Connectors

The following pages cover each of the configurations of the S52 in more detail.

### DC Version 10-30VDC PNP (Sourcing)

![Wiring Diagram](image)

**Specifications:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Voltage</td>
<td>10 to 30VDC</td>
</tr>
<tr>
<td>Target Type</td>
<td>Metallic</td>
</tr>
<tr>
<td>Electrical Configuration</td>
<td>DC - PNP</td>
</tr>
<tr>
<td>Maximum Switching Current</td>
<td>200mA</td>
</tr>
<tr>
<td>Output Voltage Drop</td>
<td>&lt; 2VDC</td>
</tr>
<tr>
<td>Residual Current (Off State Current)</td>
<td>20μA</td>
</tr>
</tbody>
</table>
BRAY Series 52 Valve Status Monitor
Operation and Maintenance Manual

DC Version 10-30VDC NPN (Sinking)

Specifications:
- Operating Voltage: 10 to 30VDC
- Target Type: Metallic
- Electrical Configuration: DC - NPN
- Maximum Switching Current: 200mA
- Output Voltage Drop: < 2VDC
- Residual Current (Off State Current): 20μA

DC Intrinsically Safe Version

WARNING
I.S. S52 must be used in conjunction with I.S. barrier. Installation and wiring should be carried out by trained personnel who will ensure that the work complies with local standards & NEC practices

Specifications:
- Operating Voltage: 7 to 12VDC
- Target Type: Metallic
- Electrical Configuration: NAMUR
**WARNING**

I.S. S52 must be used in conjunction with I.S. barrier. Installation and wiring should be carried out by trained personnel who will ensure that the work complies with local standards & NEC practices.

---

**WIRING DIAGRAM**

Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Voltage</td>
<td>20-250 VAC</td>
</tr>
<tr>
<td>Target Type</td>
<td>Metallic</td>
</tr>
<tr>
<td>Electrical Configuration</td>
<td>AC</td>
</tr>
<tr>
<td>Maximum Switching Current</td>
<td>500mA</td>
</tr>
<tr>
<td>Output Voltage Drop</td>
<td>&lt; 5VAC</td>
</tr>
<tr>
<td>Residual Current (Off State Current)</td>
<td>&lt; 1mA</td>
</tr>
</tbody>
</table>

---

Bray P/N: **52-1004-12624-536** (Kit) includes:
- 52-1004-71114-536 (S52)
- 52-1000-14811-533 (target & std. indicator)
Drawing: **ES11A-0544**

S63 Solenoid, Bray P/N: **63-0250-21520-536**

Y Cord, Bray P/N: **60-0250-23661-536**
Drawing #: **ES11A-0559**

---

**7/8” 16 UN CONNECTOR**

**PINOUT DIAGRAM**

KEY:
- PIN 1
- PIN 2
- PIN 3
- PIN 4
- PIN 5
- S1
- S2

NOTE:
Wires not used should be coiled and taped for protection.

---

PLC with Digital AC Input Module
AS-i (Actuator Sensor Interface) Version with M12 Quick Connector

Specifications:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Voltage</td>
<td>30.5 VDC by AS-i Network</td>
</tr>
<tr>
<td>Target Type</td>
<td>Magnetic</td>
</tr>
<tr>
<td>Electrical Configuration</td>
<td>AS-i Spec. 3.2 (1), (2)</td>
</tr>
<tr>
<td>Maximum Switching Current</td>
<td>100mA</td>
</tr>
<tr>
<td>Consumption Current</td>
<td>&lt; 25mA</td>
</tr>
<tr>
<td>Addressing</td>
<td>0 to 31A or B</td>
</tr>
</tbody>
</table>
| Data Bits                       | Bit 0: Sensor 1  
                                 | Bit 1: Sensor 2  
                                 | Bit 2: Output to Solenoid |

(1) Hardware AS-i Version 3.0 - configured as AS-i Version 2.1
(2) Full backwards compatibility is maintained with earlier AS-i networks and products

AS-i Controller and AS-i 24VDC Power Supply

AS-i S52, Bray P/Ns:
52-1005-12624-536 (Kit) includes:
- 52-1005-71114-536 (S52)  
- 52-1000-14821-533 (target)  
52-1000-14805-533 (high visibility indicator)
BRAY Series 52 Valve Status Monitor
Operation and Maintenance Manual

DeviceNet Version

Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Voltage</td>
<td>24VDC by DN Network</td>
</tr>
<tr>
<td>Target Type</td>
<td>Magnetic</td>
</tr>
<tr>
<td>Electrical Configuration</td>
<td>DeviceNet</td>
</tr>
<tr>
<td>Maximum Switching Current</td>
<td>100mA</td>
</tr>
<tr>
<td>Consumption Current</td>
<td>&lt; 20mA</td>
</tr>
<tr>
<td>Output Voltage Drop</td>
<td>&lt; 2.5VDC</td>
</tr>
<tr>
<td>Addressing</td>
<td>0 to 63 software configured</td>
</tr>
<tr>
<td>Data Bits</td>
<td>Input Bit 0: Sensor 1</td>
</tr>
<tr>
<td></td>
<td>Input Bit 1: Sensor 2</td>
</tr>
<tr>
<td></td>
<td>Output Bit 0: Solenoid</td>
</tr>
</tbody>
</table>

WIRING DIAGRAM

PINOUT DIAGRAM

DeviceNet S52, Bray P/Ns:
- **52-1007-12624-536** (kit) includes:
  - 52-1007-71114-536 (S52)
  - 52-1000-14821-536 (target)

High Visibility Indicator, Bray P/N: **52-1000-14805-533**

PLC with DeviceNet Scanner
**PROFIBUS DP Version**

**Specifications:**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Voltage</td>
<td>24VDC by Profibus DP</td>
</tr>
<tr>
<td>Target Type</td>
<td>Magnetic</td>
</tr>
<tr>
<td>Electrical Configuration</td>
<td>Profibus DP</td>
</tr>
<tr>
<td>Maximum Switching Current</td>
<td>100mA</td>
</tr>
<tr>
<td>Consumption Current</td>
<td>&lt; 30mA</td>
</tr>
<tr>
<td>Output Voltage Drop</td>
<td>&lt; 2.5VDC</td>
</tr>
<tr>
<td>Addressing</td>
<td>0 to 63 software configured</td>
</tr>
<tr>
<td>Data Bits</td>
<td>Input Bit 0: Sensor 1</td>
</tr>
<tr>
<td></td>
<td>Input Bit 1: Sensor 2</td>
</tr>
<tr>
<td></td>
<td>Output Bit 0: Solenoid</td>
</tr>
</tbody>
</table>

**SCHÉMA ÉLECTRIQUE**

**RACCORDEMENTS SUR BORNIER**

**Step 1:** Purchase several PROFIBUS DP S52s from your local Bray Distributor

**Step 2:** Separate the connection module from the sensor module by loosening the two fastening screws.

**Step 3:** Take an inventory of all components of the PROFIBUS DP S52 to ensure that you have all the necessary parts of the module. Clockwise from the top left on the image above, you should have the following: (a) connection module, (b) PG connectors, (c) sensor module, (d) connection plate, (e) terminal connectors.
Step 4: Use the adjustment knobs to set your device’s network address.

Step 5: Insert your solenoid cable and your PROFIBUS DP & BUS power cable through the cable glands of the connection module. Terminate the wires into the labeled connectors.

Step 6: Heat shrink the terminations and pull the excess cable back through the cable glands, aligning the connectors with the chambers of the connection module.

Step 7: Place the connection plate on the connection module and tighten the fastening screws.

Step 8: Align the connection module to the sensor module and tighten the fastening screws. Your sensor is now ready to be mounted on your actuator.

Profibus DP S52, Bray P/Ns:
- 52-1008-12624-536 (kit) includes:
  - 52-1008-71114-536 (S52)
  - 52-1000-14821-533 (target)

PLC with Profibus DP Scanner
Application Example #1 (DC PNP S52)

Customer has an Allen Bradley CompactLogix 1769 PLC platform with DC Input Module Model # 1769-IQ6XOW4. In order for you to determine if the Bray S52 2N1 DC Prox Sensor is compatible with this device, reference the specifications of each device. Using the manufacturer’s website, you should be able to find a manual for your customers DCS or PLC. In this documentation, you can do a search for the input module in question. Below are some important specifications from Allen Bradley’s literature on this specific card.

Model #: 1769-IQ6XOW4

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Input Type</td>
<td>24V dc, sinking or sourcing</td>
</tr>
<tr>
<td>Voltage, On-state Input, Min.</td>
<td>10V dc</td>
</tr>
<tr>
<td>Voltage, On-state Input, Max.</td>
<td>30V dc @ °C (86 °F)</td>
</tr>
<tr>
<td></td>
<td>26.4V dc @ 60 °C (140 °F)</td>
</tr>
<tr>
<td>Number of Inputs</td>
<td>6</td>
</tr>
<tr>
<td>Voltage, Off-State Input, Max.</td>
<td>5V dc</td>
</tr>
<tr>
<td>Current, Off-State Input, Max.</td>
<td>1.5 mA</td>
</tr>
<tr>
<td>Current, On-Stae Input, Min.</td>
<td>2 mA</td>
</tr>
<tr>
<td>Input Impedance, Nom.</td>
<td>3 K□</td>
</tr>
</tbody>
</table>

From this information, and the DC PNP S52 specifications on page 7, you should be able to determine that these two devices are compatible.

- The operating voltage of the DC S52 (specified as: 10-30VDC) is within the acceptable On-State Input Voltage Min. and Max. range of the Input Module (specified as: 10VDC to 30 VDC @ 86°F/26.4Vdc @ 140°F).
• The residual Off-state Current of the DC S52 (specified as: 20 μA) is below the Off-State Current Max. of the Input Card (specified as: 1.5mA). Note: this means that the leakage current of the S52 will not cause false readings.

• The Nominal Impedance of the Input Card (specified as: 3kΩ) is sufficient enough to limit the current flowing through the proximity switch below its Max. Switching Current (specified as: 200mA).

\[
\text{Ohm’s Law: } V = IR \quad (V = \text{Voltage, } I = \text{Current, } R = \text{Resistance}*)
\]

\[
24\text{VDC} = 1 \times 3 \text{KΩ} \\
24/3000 = .008 \text{ A or 8 mA}
\]

This value is the amount of current that will flow through the S52 in the On-State (when the target is in proximity of the sensor). This value, 8 mA, is below the Max. Switching Current of the S52 (current exceeding 200mA can damage the device) and above the Min. On-State Input Current of the input module (specified as: 2mA). *Note: Resistance in this case is referred to as Input Impedance.

Once you have determined the compatibility of the two devices; you can wire the two devices together using their appropriate wiring diagrams. The diagram in Figure 5 below shows you how to do this correctly.

*Note: Each proximity switch in the S52 will require a separate input into the PLC card; thus, (1) S52 will utilize (2) inputs into the PLC Input Module. One input for ‘Valve Open’ indication and one for ‘Valve Close’ indication. Because this specific input module only has 6 inputs, three S52s can be wired into this device. The number of necessary modules grows quite rapidly when you have several devices in use; this is why fieldbus capable versions can be so cost effective, for more information please see the fieldbus application example.

**Figure 5:** Wiring diagram showing how to wire a DC PNP S52 to an Allen Bradley Model #1769-IQ6XOW4 DC Input Module.
Application Example #2 (AS-i S52)

Customer has an AS-i (Actuator Sensor Interface) controller with an AS-i approved 24VDC power supply. Once your customer has the configuration software (usually provided with the controller) they can scan the bus and configure any AS-i device connected. Up to 62 devices can be connected to one controller (V2.1 or 3), in applications requiring several valve status monitors, cost is greatly reduced when only one single module can control 62 devices versus having to purchase a PLC input module for every three to four S52s that you have.

1) Bray S52 is connected to the AS-i BUS and is located at address 12.

2) By selecting the device at address 12, a configuration window allows you to modify the device address, check input state, and test the output.

3) Input 1 is shown in the ‘On’ State, Input 0 is ‘Off’, and the Output to the solenoid is not energized.

AS-i slave (1 of 62), Bray S52 P/Ns:
- 52-1005-12624-536 (kit) includes:
  - 52-1005-71114-536 (S52)
  - 52-1000-14821-533 (target)
  - 52-1000-14805-533 (indicator)

AS-i Controller and AS-i 24VDC Power Supply