

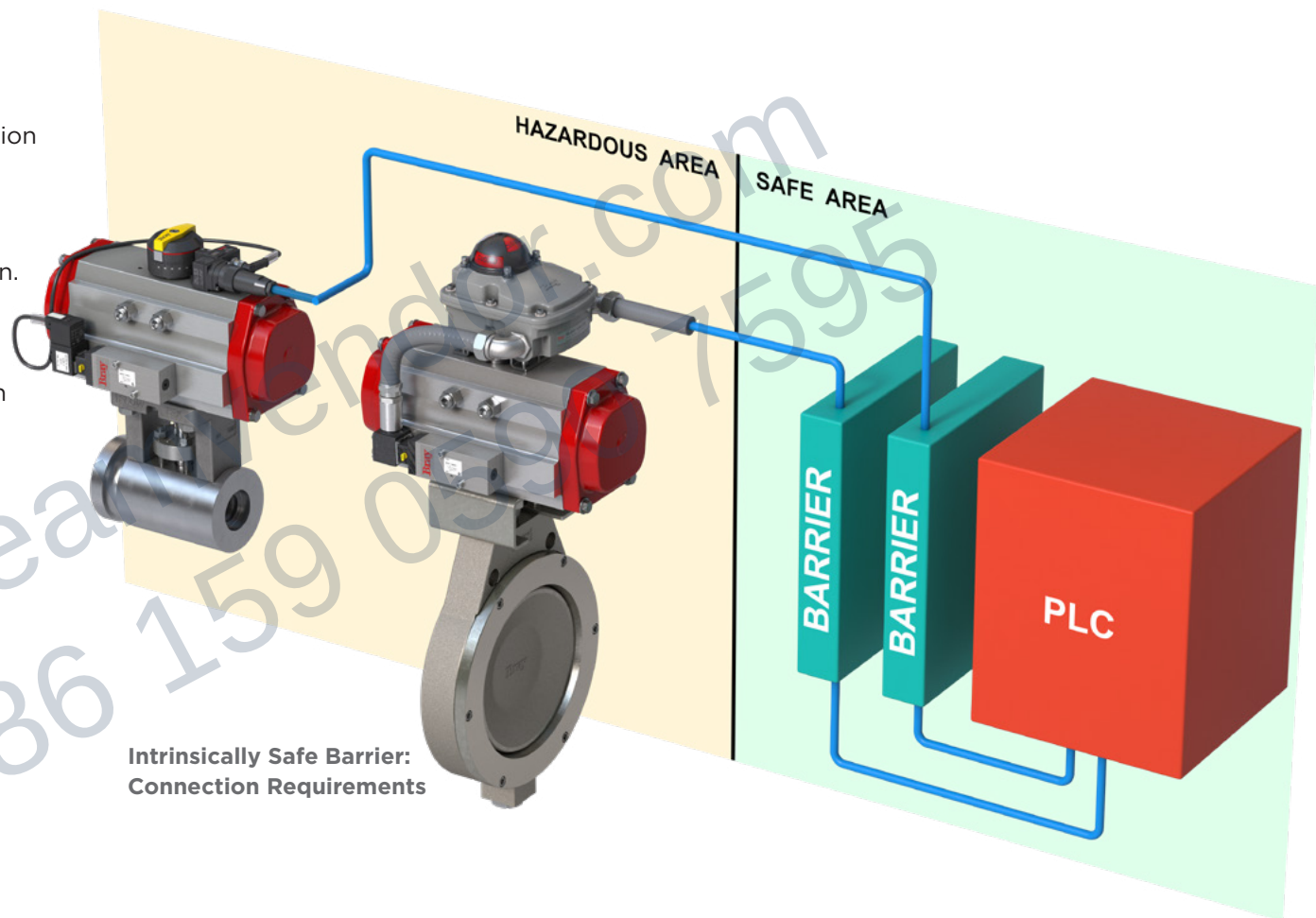
SELECTION GUIDE

INTRINSICALLY SAFE PACKAGES FOR VALVE STATUS MONITORING



When specifying electronics in hazardous areas, it is important to ensure the device is equipped with the correct protection type. For some customers, the **intrinsically safe** protection type can be a cost effective, compact solution. Designed for safe operation of electrical equipment in hazardous areas, this protection technique limits the energy (electrical and thermal) available for ignition.

The success of intrinsically safe certification lies in choosing the right supporting components to meet the low-voltage requirements. This guide will help to outline some of Bray's common packages.



Intrinsically Safe Barrier:
Connection Requirements

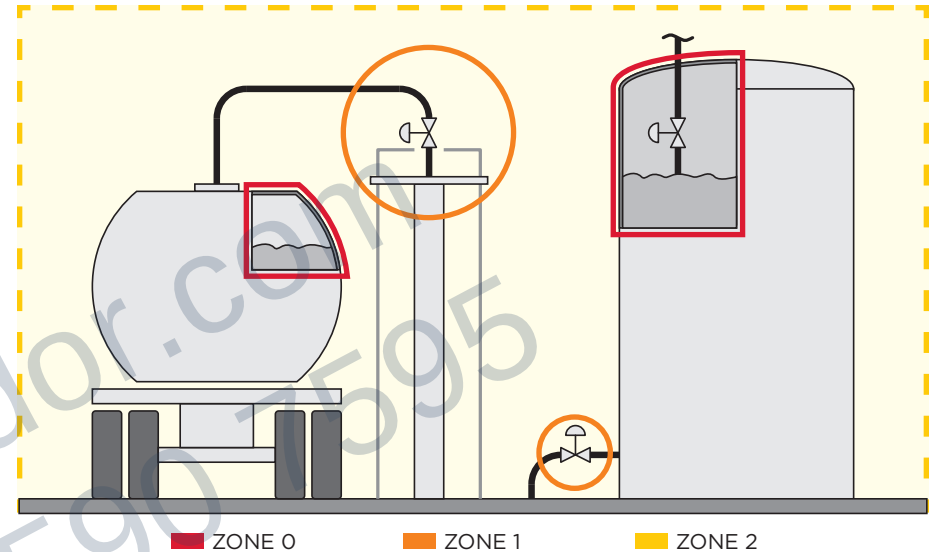


HAZARDOUS LOCATION CLASSIFICATIONS

NEC 500	
PROBABILITY OF HAZARDOUS MATERIAL	
DIVISION 1	DIVISION 2
Explosive atmosphere is continually or likely present.	Explosive atmosphere is not likely present.
NATURE OF HAZARDOUS MATERIAL	
CLASS I — GASES & VAPORS	
DIVISION 1	DIVISION 2
GROUP A Acetylene	
GROUP B Hydrogen	
GROUP C Ethylene	
GROUP D Propane	
CLASS II — DUST	
DIVISION 1	DIVISION 2
GROUP E Metal Dusts	
GROUP F Carbon-based Dusts	
GROUP G Non-conductive Dusts	
CLASS III — FIBERS & FLYINGS	

ATEX / IECEx		
PROBABILITY OF HAZARDOUS MATERIAL		
ZONE 0 / 20	ZONE 1 / 21	ZONE 2 / 22
Explosive atmosphere is continually present.	Explosive atmosphere is likely present.	Explosive atmosphere is not likely present.
NATURE OF HAZARDOUS MATERIAL		
G — GASES & VAPORS		
ZONE 0	ZONE 1	ZONE 2
IIC Acetylene & Hydrogen		
IIB+H2 Hydrogen		
IIB Ethylene		
IIA Propane		
D — DUST		
ZONE 20	ZONE 21	ZONE 22
IIIC Conductive Dusts		
IIIB Non-conductive Dusts		
IIIA Fibers		

TYPICAL HAZARDOUS GASES & VAPORS APPLICATION



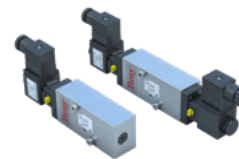
INTRINSICALLY SAFE PRODUCTS^{1,2} | Electrically Limited



**SERIES 6A
POSITIONER**
NEC
CLASS I DIV 1 A,B,C,D
ATEX/IECEx
G ZONE 1 IIC
D ZONE 21 IIIC



**SERIES 5A / 5B
VALVE STATUS MONITOR**
NEC
CLASS I DIV 1 A,B,C,D
CLASS II/III DIV 1 E,F,G
ATEX/IECEx
G ZONE 0 IIC



**SERIES 60
SOLENOID**
NEC
CLASS I DIV 1 A,B,C,D
CLASS II DIV 1 E,F,G



**SERIES 54
PROXIMITY SENSOR**
NEC
CLASS I DIV 1 A,B,C,D
CLASS II DIV 1 E,F,G
ATEX/IECEx
G ZONE 0 IIC

NOTES:

- 1 For full rating specifications, see product literature.
2 Order with appropriate intrinsically safe barrier.

NAMUR Sensor + Adjustable Activator + Optional Solenoid

INTRINSICALLY SAFE



1 NAMUR SENSOR

DESCRIPTION	PART NUMBER
I.S. Proximity Sensor	540003-71104533



2 ACTIVATOR (Choose One)

DESCRIPTION	PART NUMBER
S92/93 Sizes 063-128 Imperial	54063A-14800536
S92/93 Sizes 160-210 Imperial	54160A-14800536
S92/93 Sizes 063-128 Metric	54063A-14850536
S92/93 Sizes 160-255 Metric	54160A-14850536
S98 Metric	54063A-14850536
S92/93 Sizes 063-128 Imperial	54063C-14800536
S92/93 Sizes 160 Imperial	54160C-14800536
S92/93 Sizes 210 Imperial	54210C-14800536
S92/93 Sizes 063-128 Metric	54063C-14850536
S92/93 Sizes 160 Metric	54160C-14850536
S92/93 Sizes 210-255 Metric	54210C-14850536
S98 Metric	54063C-14850536



3 BARRIER¹ (Optional)

DESCRIPTION	PART NUMBER
Intrinsically Safe Barrier 24V	090006-71134533



S92/S93 RACK & PINION ACTUATOR

OR

S98 SCOTCH YOKE ACTUATOR²

OR

NO SOLENOID

4 SOLENOID

DESCRIPTION	PART NUMBER
I.S. 24VDC	600250-21526536

4 SOLENOID (Choose One)

DESCRIPTION	PART NUMBER
I.S. 24VDC SR	VSG-3421-D14-HCC-XISX6-D024
I.S. 24VDC DA	VSG-4422-D14-HCC-XISX6-D024

4 SOLENOID

NONE

5 CONNECTOR

DESCRIPTION	PART NUMBER
Y-Connectors	600250-23662536

5 CONNECTOR

NONE

5 CONNECTOR

DESCRIPTION	PART NUMBER
4 pin M12 to Flying Lead	090004-76145534

6 CORDSET

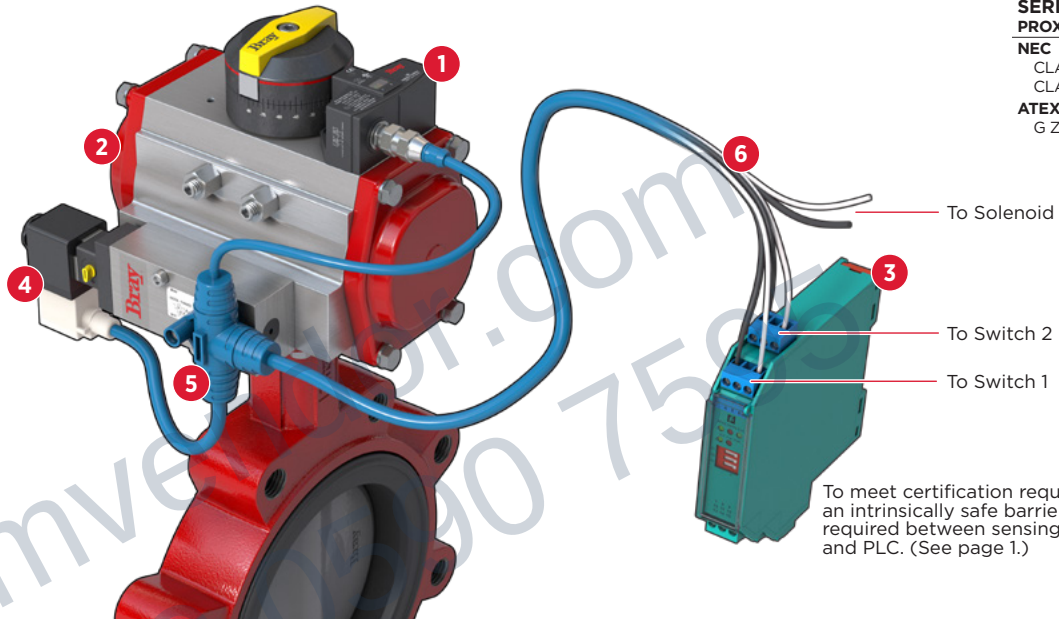
DESCRIPTION	PART NUMBER
6 pin M12 to Flying Lead	090004-76152534

6 CORDSET

DESCRIPTION	PART NUMBER
6 pin M12 to Flying Lead	090004-76152534

6 CORDSET

NONE



To meet certification requirements, an intrinsically safe barrier is required between sensing device and PLC. (See page 1.)



SERIES 54
PROXIMITY SENSOR
NEC
CLASS I DIV 1 A,B,C,D
CLASS II DIV 1 E,F,G
ATEX/IECEx
G ZONE 0 IIC

NOTES:

1 An intrinsically safe barrier is required to meet certification requirements. (See page 1.)

2 Consult factory mounting.

3 For 4 switches, change "2" after H to "4".

4 Refer to specific product technical manuals for additional details.

NAMUR Sensor + Adjustable Activator + Optional Solenoid + Conduit Connections

INTRINSICALLY SAFE



1 NAMUR SENSOR

DESCRIPTION	PART NUMBER
I.S. Proximity Sensor	540013-71104533



2 ACTIVATOR (Choose One)

DESCRIPTION	PART NUMBER
S92/93 Sizes 063-128 Imperial	54063A-14800536
S92/93 Sizes 160-210 Imperial	54160A-14800536
S92/93 Sizes 063-128 Metric	54063A-14850536
S92/93 Sizes 160-255 Metric	54160A-14850536
S98 Metric	54063A-14850536
S92/93 Sizes 063-128 Imperial	54063C-14800536
S92/93 Sizes 160 Imperial	54160C-14800536
S92/93 Sizes 210 Imperial	54210C-14800536
S92/93 Sizes 063-128 Metric	54063C-14850536
S92/93 Sizes 160 Metric	54160C-14850536
S92/93 Sizes 210-255 Metric	54210C-14850536
S98 Metric	54063C-14850536



3 BARRIER¹ (Optional)

DESCRIPTION	PART NUMBER
Intrinsically Safe Barrier 24V	090006-71134533



S92/S93 RACK & PINION ACTUATOR

OR

S98 SCOTCH YOKE ACTUATOR²

OR

NO SOLENOID

4 SOLENOID

DESCRIPTION	PART NUMBER
I.S. 24VDC	600250-21526536
I.S. Gland	600251-71106533

4 SOLENOID (Choose One)

DESCRIPTION	PART NUMBER
I.S. 24VDC SR	VSG-3421-D14-HCC-XISX6-D024
I.S. 24VDC DA	VSG-4422-D14-HCC-XISX6-D024

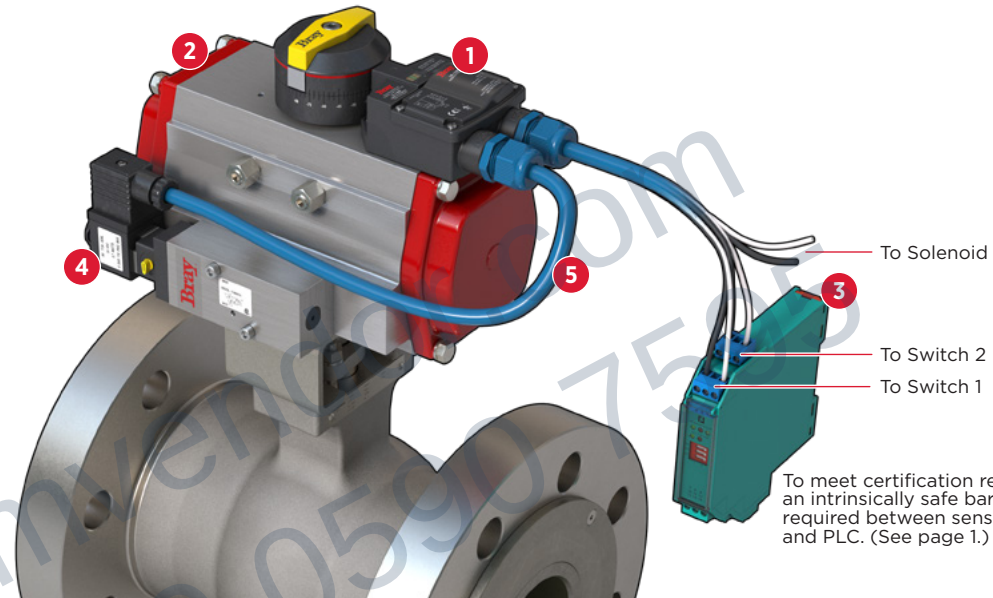
4 SOLENOID

NONE

5 PREWIRE KIT

5 PREWIRE KIT

5 PREWIRE KIT



To meet certification requirements, an intrinsically safe barrier is required between sensing device and PLC. (See page 1.)



SERIES 54
PROXIMITY SENSOR
NEC
CLASS I DIV 1 A,B,C,D
CLASS II DIV 1 E,F,G
ATEX/IECEx
G ZONE 0 IIC

NOTES:

1 An intrinsically safe barrier is required to meet certification requirements. (See page 1.)

2 Consult factory mounting.

3 For 4 switches, change "2" after H to "4".

4 Refer to specific product technical manuals for additional details.

NAMUR Sensor + Adjustable Activator + Optional Solenoid + S-Connector

INTRINSICALLY SAFE



1 NAMUR SENSOR

DESCRIPTION	PART NUMBER
I.S. Proximity Sensor	540043-71104533



2 CORDSET

DESCRIPTION	PART NUMBER
Cordset Rd24 Pin	090700-71155517



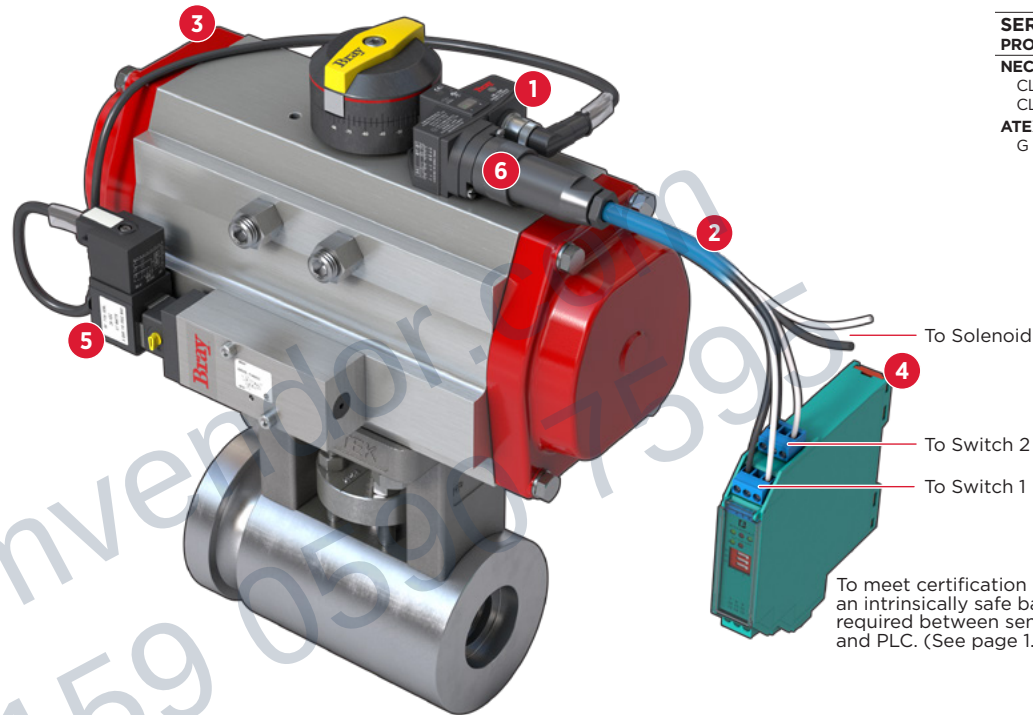
3 ACTIVATOR (Choose One)

DESCRIPTION	PART NUMBER
S92/93 Sizes 063-128 Imperial	54063A-14800536
S92/93 Sizes 160-210 Imperial	54160A-14800536
S92/93 Sizes 063-128 Metric	54063A-14850536
S92/93 Sizes 160-255 Metric	54160A-14850536
S98 Metric	54063A-14850536
S92/93 Sizes 063-128 Imperial	54063C-14800536
S92/93 Sizes 160-210 Imperial	54160C-14800536
S92/93 Sizes 063-128 Metric	54063C-14850536
S92/93 Sizes 160-255 Metric	54160C-14850536
S98 Metric	54063C-14850536



4 BARRIER¹ (Optional)

DESCRIPTION	PART NUMBER
Intrinsically Safe Barrier 24V	090006-71134533



**SERIES 54
PROXIMITY SENSOR**
NEC
CLASS I DIV 1 A,B,C,D
CLASS II DIV 1 E,F,G
ATEX/IECEx
G ZONE 0 IIC

To Solenoid

To Switch 2

To Switch 1

To meet certification requirements, an intrinsically safe barrier is required between sensing device and PLC. (See page 1.)

S92/S93 RACK & PINION ACTUATOR

OR

S98 SCOTCH YOKE ACTUATOR²

OR

NO SOLENOID

5 SOLENOID

DESCRIPTION	PART NUMBER
I.S. 24VDC	600250-21526536

5 SOLENOID (Choose One)

DESCRIPTION	PART NUMBER
I.S. 24VDC SR	VSG-3421-D14-HCC-XISX6-D024
I.S. 24VDC DA	VSG-4422-D14-HCC-XISX6-D024

5 SOLENOID

NONE

6 CONNECTOR

DESCRIPTION	PART NUMBER
S-Connector	090001-76160882

6 CONNECTOR

DESCRIPTION	PART NUMBER
S-Connector	090001-76160882

6 CONNECTOR

NONE

NOTES:

1 An intrinsically safe barrier is required to meet certification requirements. (See page 1.)

2 Consult factory mounting.

3 For 4 switches, change "2" after H to "4".

4 Refer to specific product technical manuals for additional details.

NAMUR Valve Status Monitor + 2 Switches + Optional Solenoid + Connector

INTRINSICALLY SAFE



1 NAMUR VALVE STATUS MONITOR

DESCRIPTION	PART NUMBER
5A 2 Prox Switch Aluminum	5A0000-126H2536 ³
5B 2 Prox Switch Aluminum	5B0000-126H2536 ³
5A 2 Prox Switch Resin	5A0000-126H2517 ³
5B 2 Prox Switch Resin	5B0000-126H2517 ³



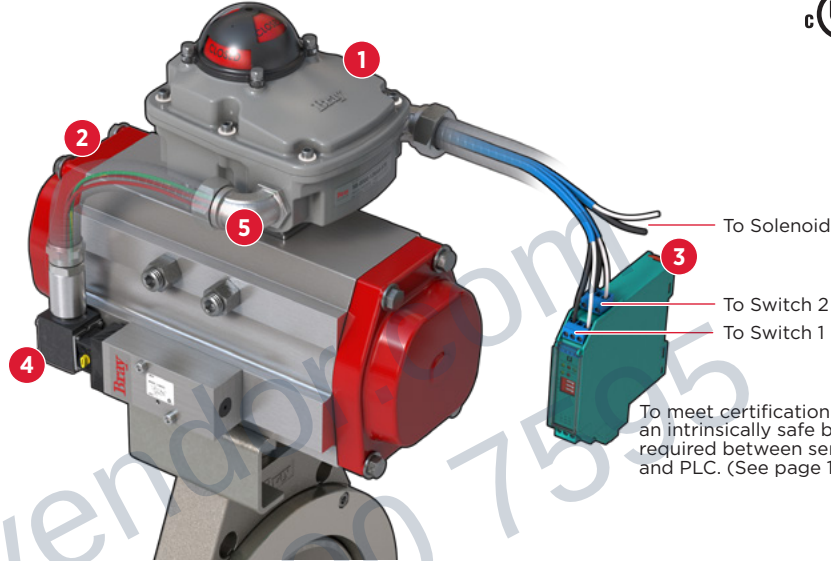
2 MOUNTING (Choose One)

DESCRIPTION	PART NUMBER
S92/93 Sizes 063-128 Imperial	5B0000-22600534
S92/93 Sizes 160-210 Imperial	5B0000-22601534
S92/93 Sizes 063-128 Metric	5B0000-22650534
S92/93 Sizes 160-255 Metric	5B0000-22651534
S98 Metric	5B0000-22630534



3 BARRIER¹ (Optional)

DESCRIPTION	PART NUMBER
Intrinsically Safe Barrier 24V	090006-71134533



**SERIES 5A / 5B
VALVE STATUS MONITOR**
NEC
 CLASS I DIV 1 A,B,C,D
 CLASS II/III DIV 1 E,F,G
ATEX/IECEx
 G ZONE 0 IIC

To meet certification requirements, an intrinsically safe barrier is required between sensing device and PLC. (See page 1.)

S92/S93 RACK & PINION ACTUATOR

OR

S98 SCOTCH YOKE ACTUATOR²

OR

NO SOLENOID

4 SOLENOID

DESCRIPTION	PART NUMBER
I.S. 24VDC	600250-21526536

4 SOLENOID (Choose One)

DESCRIPTION	PART NUMBER
I.S. 24VDC SR	VSG-3421-D14-HCC-XISX6-D024
I.S. 24VDC DA	VSG-4422-D14-HCC-XISX6-D024

4 SOLENOID

NONE

5 CONNECTOR

DESCRIPTION
Conduit

5 CONNECTOR

DESCRIPTION
Conduit

5 CONNECTOR

NONE

NOTES:

1 An intrinsically safe barrier is required to meet certification requirements. (See page 1.)

2 Consult factory mounting.

3 For 4 switches, change "2" after H to "4".

4 Refer to specific product technical manuals for additional details.

steamvendor.com
+86 159 0590 7595

SINCE 1986, BRAY HAS PROVIDED FLOW CONTROL SOLUTIONS
FOR A VARIETY OF INDUSTRIES AROUND THE WORLD.

VISIT **BRAY.COM** TO LEARN MORE ABOUT
BRAY PRODUCTS AND LOCATIONS NEAR YOU.

HEADQUARTERS

Bray International, Inc.

13333 Westland East Blvd.

Houston, Texas 77041

Tel: +1.281.894.5454

All statements, technical information, and recommendations in this bulletin are for general use only. Consult Bray representatives or factory for the specific requirements and material selection for your intended application. The right to change or modify product design or product without prior notice is reserved. Patents issued and applied for worldwide. Bray® is a registered trademark of Bray International, Inc.

© 2020 BRAY INTERNATIONAL. ALL RIGHTS RESERVED. BRAY.COM

B-1079_EL_IS_GUIDE_2020-06



THE HIGH PERFORMANCE COMPANY

BRAY.COM