

**BULLETIN 600T**

# **ISO Valves and Serial Bus Communication with Turck Modular I/O System**



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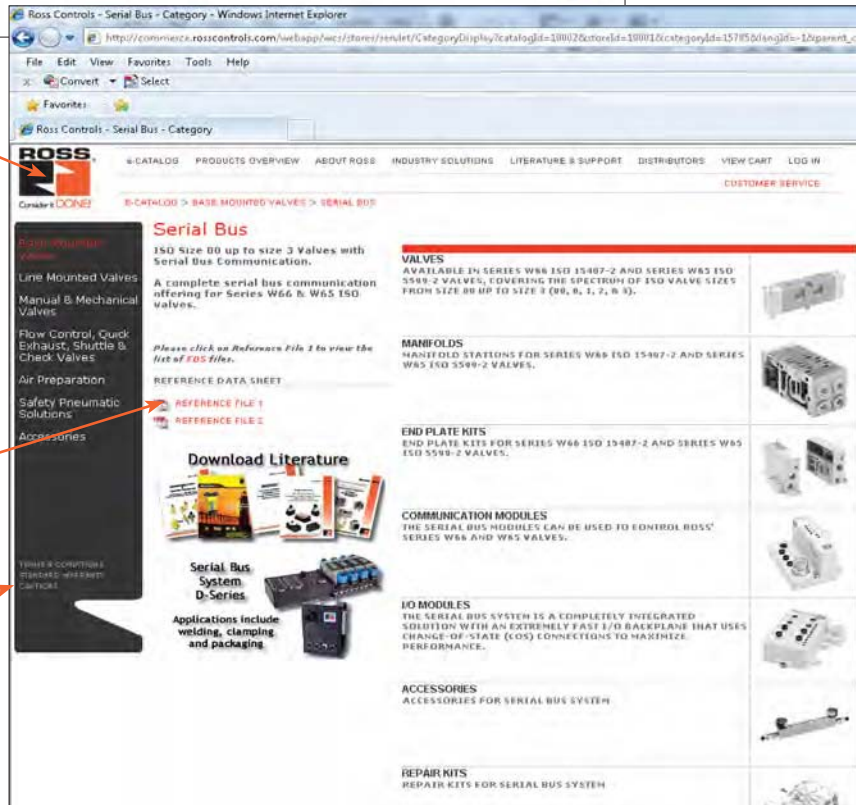
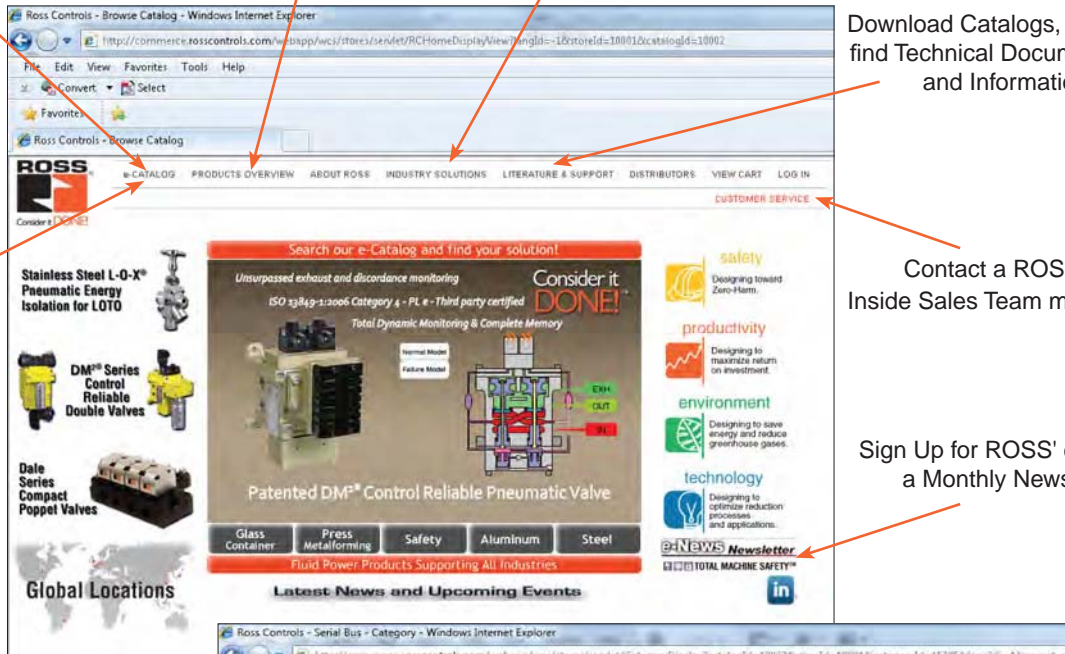
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Standard Warranty and Cautions



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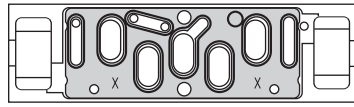
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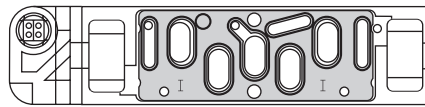
# Standard Definitions

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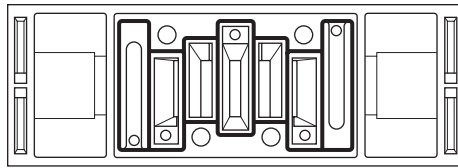
**15407-1:** Drop-cord Standards  
for Size 0 (26mm) & Size 00 (18mm) Wide Valves



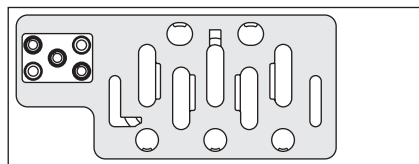
**15407-2:** Plug-in Standards  
for Size 0 (26mm) & Size 00 (18mm) Wide Valves



**5599-1:** Drop-cord Standards for Sizes 1, 2, 3



**5599-2:** Plug-in Standards for Size 1, 2, 3



## WARNING

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

This document and other information from ROSS CONTROLS®, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application including consequences of any failure, and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

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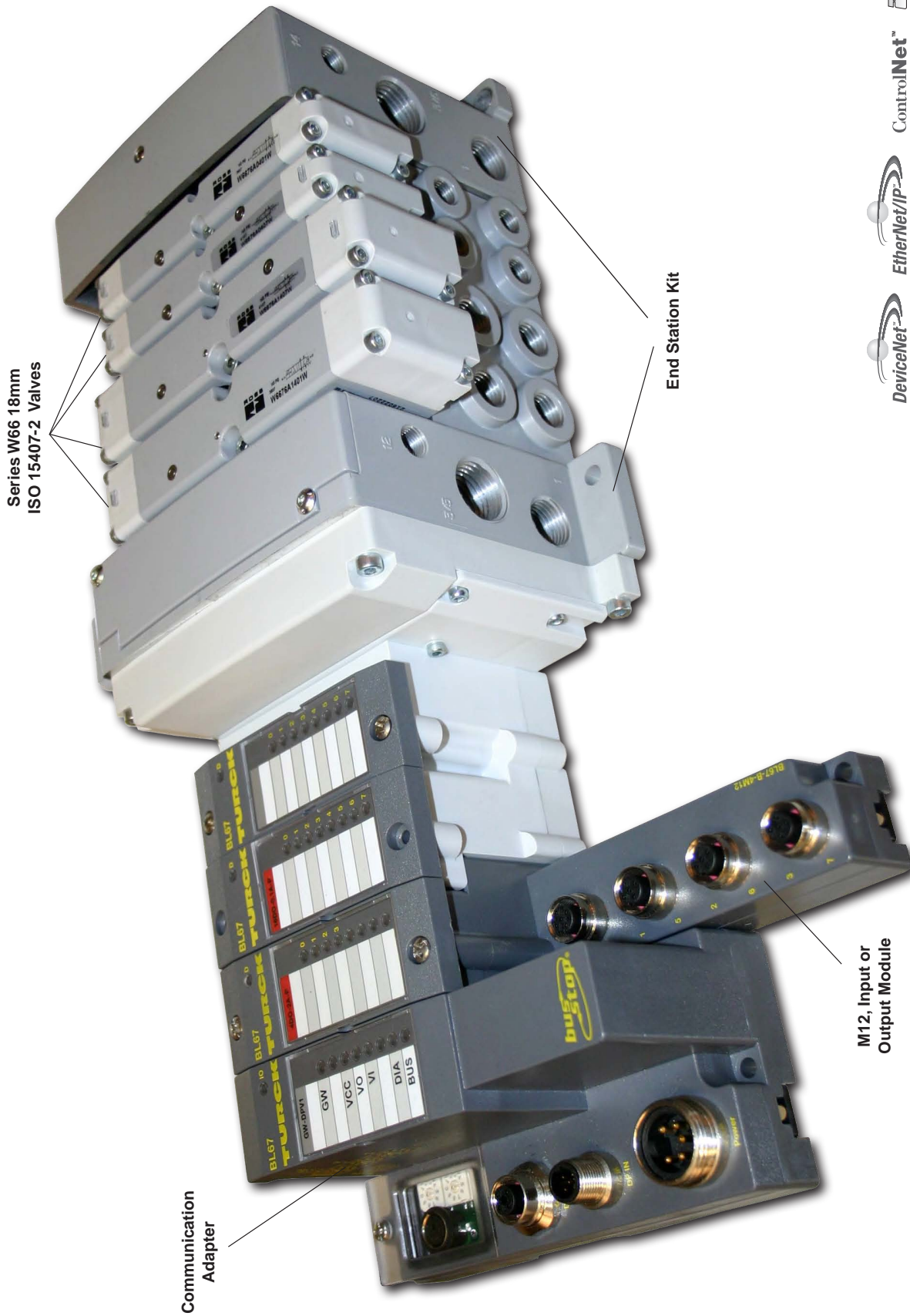


## Serial Bus System

- A complete Serial Bus communication offering for all ISO valves
- UL, CE, CSA certifications (as marked)

## I/O - Centralized Configuration

- Centralized Serial Bus system
- Pneumatics and I/O are in close proximity to one another
- I/O density per module = 8



Communication Adapter

Series W66 18mm  
ISO 15407-2 Valves

End Station Kit

M12, Input or  
Output Module

# ISO Size 00 & 0 Valves Series W66

## HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

**W66**

**76**

**A**

**0**

**4**

**01**

**W**

Function*		
4-Way 2-Position	Remote Pilot	56
	Solenoid Pilot	76
4-Way 3-Position	Remote Pilot	57
	Solenoid Pilot	77
Dual 3-Way 2-Position	Normally Open	70
	Normally Closed	75
	NC / NO NC - 14 End	78

Basic Size	
Size 00 (18mm)	0
Size 0 (26mm)	1

Options*		Voltage			
4-Way 2-Position	Single	Plug-In (15407-2)	Non-Locking Overrides	Internal Pilot - 01	
			Locking Overrides	External Pilot - 51	
		Drop Cord (15407-1)	Non-Locking Overrides	Internal Pilot - 11	
			Locking Overrides	External Pilot - 21	
	Double	Plug-In (15407-2)	Non-Locking Overrides	Internal Pilot - 61	
			Locking Overrides	External Pilot - 81	
		Drop Cord (15407-1)	Non-Locking Overrides	Internal Pilot - 71	
			Locking Overrides	External Pilot - 91	
	4-Way 3-Position	Closed Center	Plug-In (15407-2)	Non-Locking Overrides	Internal Pilot - 07
				Locking Overrides	External Pilot - 57
			Drop Cord (15407-1)	Non-Locking Overrides	Internal Pilot - 17
				Locking Overrides	External Pilot - 27
Power Center		Plug-In (15407-2)	Non-Locking Overrides	Internal Pilot - 67	
			Locking Overrides	External Pilot - 87	
		Drop Cord (15407-1)	Non-Locking Overrides	Internal Pilot - 77	
			Locking Overrides	External Pilot - 97	
Open Center		Plug-In (15407-2)	Non-Locking Overrides	Internal Pilot - 01	
			Locking Overrides	External Pilot - 51	
		Drop Cord (15407-1)	Non-Locking Overrides	Internal Pilot - 11	
			Locking Overrides	External Pilot - 21	
Dual 3-Way 2-Position	Plug-In (15407-2)	Non-Locking Overrides	Internal Pilot - 61		
		Locking Overrides	External Pilot - 81		
	Drop Cord (15407-1)	Non-Locking Overrides	Internal Pilot - 71		
		Locking Overrides	External Pilot - 91		

Voltage	
24 VDC	W
120 VAC	Z

\* Be sure to choose Options from the correct list. For example, if a Function of 4-Way 2-Position is chosen, then only choose Options from the section listed for that function. See the light gray-shaded columns of the Function and Options lists.



Series W66 (15407-1)  
Size 00 (18mm), Single Solenoid (5/2)



Series W66 (15407-2)  
Size 00 (18mm), Double Solenoid (5/2)



Series W66 (15407-2)  
Size 0 (26mm), Double Solenoid (5/3)  
Open Center

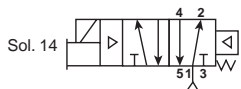
# Plug-in, Series W66 (15407-2)

## Size 00 (18mm) & Size 0 (26mm)

### 5/2 Valves – Single Solenoid Pilot



Series W66, Size 00



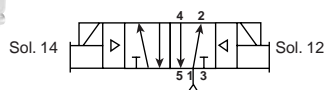
ISO Size	Port Size	Valve Model Number*	Avg. C <sub>v</sub>	Dimensions inches (mm)		
				Length	Width	Height
00	1/8	W6676A0401	0.55	4.43 (113)	0.72 (18)	1.98 (50)
0	1/4	W6676A1401	1.1	5.10 (130)	1.02 (26)	1.98 (50)

\* Sub-base not included. See page 10-17 for sub-bases, manifolds and accessories.

### 5/2 Valves – Double Solenoid Pilot



Series W66, Size 00



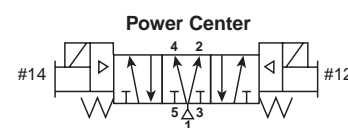
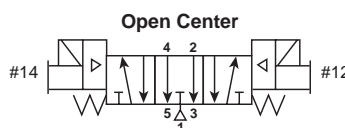
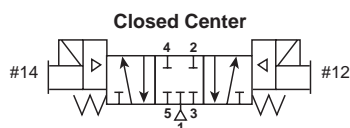
ISO Size	Port Size	Valve Model Number*	Avg. C <sub>v</sub>	Dimensions inches (mm)		
				Length	Width	Height
00	1/8	W6676A0407	0.55	4.43 (113)	0.72 (18)	1.98 (50)
0	1/4	W6676A1407	1.1	5.10 (130)	1.02 (26)	1.98 (50)

\* Sub-base not included. See page 10-17 for sub-bases, manifolds and accessories.

### 5/3 Valves – Double Solenoid Pilot



Series W66, Size 00



Series W66, Size 0

ISO Size	Port Size	Valve Model Number*	Avg. C <sub>v</sub>	Dimensions inches (mm)		
				Length	Width	Height
<b>Closed Center</b>						
00	1/8	W6677A0401	0.50	4.43 (113)	0.72 (18)	1.98 (50)
0	1/4	W6677A1401	1.0	5.10 (130)	1.02 (26)	1.98 (50)
<b>Open Center</b>						
00	1/8	W6677A0407	0.50	4.43 (113)	0.72 (18)	1.98 (50)
0	1/4	W6677A1407	1.0	5.10 (130)	1.02 (26)	1.98 (50)
<b>Power Center</b>						
00	1/8	W6677A0403	0.50	4.43 (113)	0.72 (18)	1.98 (50)
0	1/4	W6677A1403	1.0	5.10 (130)	1.02 (26)	1.98 (50)

\* Sub-base not included. See page 10-17 for sub-bases, manifolds and accessories.

## Remote Pressure Control Models Available (2 & 3-Position) – Consult ROSS

#### STANDARD SPECIFICATIONS (for valves on this page):

**Solenoids:** Bi-polar, surge suppression (standard), indicator lights.

**Standard Voltages:** 1.0, 24 volts DC; 2.0 VA, 120 volts AC.

**Flow Media:** Filtered air; 5 micron recommended.

#### Operating Pressure:

Vacuum to 145 psig (9.9 bar).

*Minimum Operating Pressure:*

2-position : 20 psig (1.37 bar).

3-position: 30 psig (2.07 bar).

**Manifolds:** Terminal Block Wiring (HA Only).

*Collective Wiring:* 25-Pin D-Sub; 19-Pin Round; 16 Point Terminal Strip; M23, 12-Pin; Isysnet Field Bus.

#### Construction:

*Valve Body:* Die Cast Aluminum.

*Ens Caps:* Polybutylene Terephthalate (PBT).

*Fasteners:* Zinc Plated Steel.

*Coils:* Thermoset Plastic.

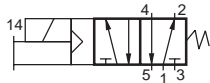
**Port Threads:** NPT, BSPP. For BSPP threads add a "D" prefix to the model number, e.g., DW6677A0401.

**Manifolds:** Terminal Block Wiring (HA Only).



# Spool and Sleeve Valves for ISO Sub-Bases (5599/II) Series W65

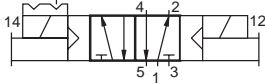
## 5/2 Valves – Single Solenoid Pilot Controlled, Spring Return



ISO Size	Port Size	Valve Model Number*	Avg. C <sub>v</sub>	Dimensions inches (mm)			Weight lb (kg)
				Length	Width	Height	
1	1/4 - 3/8	W6576A2401	1.0	6.3 (161)	1.6 (41)	2.7 (69)	1.5 (0.7)
2	3/8 - 1/2	W6576A3401	2.3	7.3 (186)	2.1 (52)	2.8 (71)	2.0 (1.0)
3	1/2 - 3/4	W6576A4401	3.4	8.5 (216)	2.6 (67)	3.1 (78)	3.5 (1.6)

\* Sub-base not included. See page 11-17 for sub-bases, manifolds and accessories.

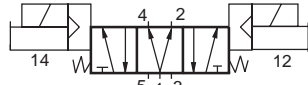
## 5/2 Valves – Double Solenoid Pilot Controlled, Detented



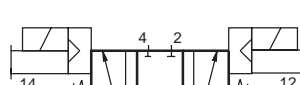
ISO Size	Port Size	Valve Model Number*	Avg. C <sub>v</sub>	Dimensions inches (mm)			Weight lb (kg)
				Length	Width	Height	
1	1/4 - 3/8	W6576A2407	1.0	8.8 (224)	1.6 (41)	2.7 (69)	2.0 (1.0)
2	3/8 - 1/2	W6576A3407	2.3	9.0 (228)	2.1 (52)	2.8 (71)	2.5 (1.2)
3	1/2 - 3/4	W6576A4407	3.4	10.0 (254)	2.6 (67)	3.1 (78)	4.0 (1.9)

\* Sub-base not included. See pages 11-17 for sub-bases, manifolds and accessories.

## 5/3 Valves – Double Solenoid Pilot Controlled



Power Center



Closed Center



Open Center

ISO Size	Port Size	Valve Model Number*			Avg. C <sub>v</sub>	Dimensions inches (mm)			Weight lb (kg)
		Power Center	Closed Center	Open Center		Length	Width	Height	
1	1/4 - 3/8	W6577A2902	W6577A2401	W6577A2407	1.0	8.8 (224)	1.6 (41)	2.7 (69)	2.0 (1.0)
2	3/8 - 1/2	W6577A3901	W6577A3401	W6577A3407	2.3	9.0 (228)	2.1 (52)	2.8 (71)	2.5 (1.2)
3	1/2 - 3/4	W6577A4900	W6577A4401	W6577A4407	3.4	10.0 (254)	2.6 (67)	3.1 (78)	4.0 (1.9)

\* Sub-base not included. See pages 11-17 for sub-bases, manifolds and accessories.

The W65 Series has a base electrical connector which eliminates the need to disconnect wires to remove the valve. This eliminates drop cords, simplifies maintenance and connection to Serial Data Communication systems. For more information, refer to Bulletin 379B (form number A10090).

### STANDARD SPECIFICATIONS (for valves on this page):

**Solenoids:** Rated for continuous duty.

**Standard Voltages:** 100-110 volts, 50 Hz; 100-120 volts, 60 Hz; 24 volts DC; 110 volts DC. For other voltages, consult ROSS.

**Power Consumption:** Each solenoid. 6.5 VA holding on 50 or 60 Hz; 3.5 watts on DC (at 10 bar).

**Ambient Temperature:** 40° to 120°F (4° to 50°C).

**Media Temperature:** 40° to 175°F (4° to 80°C).

**Flow Media:** Filtered air; 5 micron recommended.

### Standard Inlet Pressure:

Size 1 models: 2-10 bar; Size 2 & 3 models: 1-10 bar.

All sizes also available up to 16 bar.

**Pilot Supply:** Internal/external supply selected automatically. Required pressure at least 30 psig (2 bar).

**Certification / Approval:** CSA

### Materials of Construction:

End Caps & Valve Body: Die Cast Aluminum

Fasteners: Zinc Plated Steel

Spool & Sleeve: Stainless Steel

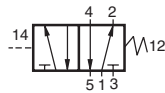
Coils: Thermoset Plastic

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.



# Spool and Sleeve Valves for ISO Sub-Bases (5599/II) Series W65

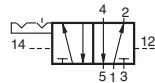
## 5/2 Valves – Single Pressure Controlled, Spring Return



ISO Size	Port Size	Valve Model Number*	Avg. C <sub>v</sub>	Dimensions inches (mm)			Weight lb (kg)
				A	B	C	
1	1/4 - 3/8	W6556A2411	1.0	4.8 (121)	1.6 (41)	2.7 (69)	0.8 (0.4)
2	3/8 - 1/2	W6556A3411	2.3	5.8 (148)	2.1 (52)	2.8 (71)	1.5 (0.7)
3	1/2 - 3/4	W6556A4411	3.4	7.0 (178)	2.6 (67)	3.1 (78)	3.0 (1.4)

\* Sub-base not included. See pages 11-17 for sub-bases, manifolds and accessories.

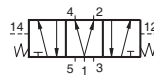
## 5/2 Valves – Double Pressure Controlled, Detented



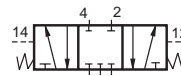
ISO Size	Port Size	Valve Model Number*	Avg. C <sub>v</sub>	Dimensions inches (mm)			Weight lb (kg)
				A	B	C	
1	1/4 - 3/8	W6556A2417	1.0	4.8 (121)	1.6 (41)	2.7 (69)	0.8 (0.4)
2	3/8 - 1/2	W6556A3417	2.3	5.8 (148)	2.1 (52)	2.8 (71)	1.5 (0.7)
3	1/2 - 3/4	W6556A4417	3.4	7.0 (178)	2.6 (67)	3.1 (78)	3.0 (1.4)

\* Sub-base not included. See pages 11-17 for sub-bases, manifolds and accessories.

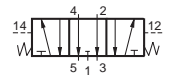
## 5/3 Valves – Double Pressure Controlled



Power Center



Closed Center



Open Center

ISO Size	Port Size	Valve Model Number*			Avg. C <sub>v</sub>	Dimensions inches (mm)			Weight lb (kg)
		Power Center	Closed Center	Open Center		A	B	C	
1	1/4 - 3/8	–	W6557A2411	W6557A2417	1.0	4.8 (121)	1.6 (41)	2.7 (69)	0.8 (0.4)
2	3/8 - 1/2	W6557A3901	W6557A3411	W6557A3417	2.3	5.8 (148)	2.1 (52)	2.8 (71)	1.5 (0.7)
3	1/2 - 3/4	W6557A4900	W6557A4411	W6557A4417	3.4	7.0 (178)	2.6 (67)	3.1 (78)	3.0 (1.4)

\* Sub-base not included. See pages 11-17 for sub-bases, manifolds and accessories.

**STANDARD SPECIFICATIONS** (for valves on this page):  
**Ambient/Media Temperature:** 40° to 175°F (4° to 80°C).  
**Flow Media:** Filtered air; 5 micron recommended.  
**Standard Inlet Pressure:**  
*Size 1 models:* 2-10 bar;  
*Size 2 & 3 models:* 1-10 bar.  
 All sizes also available up to 16 bar.

**Pilot Supply:** Internal/external supply selected automatically.  
 Required pressure at least 30 psig (2 bar).

**Materials of Construction:**

End Caps & Valve Body: Die Cast Aluminum  
 Fasteners: Zinc Plated Steel  
 Spool & Sleeve: Stainless Steel

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.

# Plug-in, Series W66 (15407-2)

## Size 00 & 0 Manifold / Sub-Base Kits

### HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

**R** **PS5511** **13** **M** **P**

Basic Series	
ISO 15407-2 18mm, Series W66, Size 00	<b>PS5611</b>
ISO 15407-2 26mm, Series W66, Size 0	<b>PS5511</b>

Mounting Style / Port Size	
Series W66, Size 00	
Manifold with 1/8 NPT End Ports	<b>51</b>
Manifold with 1/8 BSPP End Port	<b>52</b>
Manifold with 1/8 NPT Bottom / End Port	<b>61</b>
Manifold with 1/8 BSPP Bottom / End Port	<b>62</b>
Series W66, Size 0	
Subbase with 1/4 NPT Side Ports	<b>13</b>
Subbase with 1/4 BSPP Side Ports	<b>14</b>
Subbase with 1/4 NPT Bottom / Side Port	<b>23</b>
Subbase with 1/4 BSPP Bottom / Side Port	<b>24</b>
Manifold with 1/4 NPT End Port	<b>53</b>
Manifold with 1/4 BSPP End Port	<b>54</b>
Manifold with 1/4 NPT Bottom / End Port	<b>63</b>
Manifold with 1/4 BSPP Bottom / End Port	<b>64</b>

Enclosures / Lead Length	
<b>J*</b>	Circuit Board, Single Address
<b>M*</b>	Circuit Board, Double Address

### Sub-Base Kits

Series W66, Size 0 Sub-Base



### Manifold Kits

Series W66, Size 00 Series  
2-Station Manifold

Series W66, Size 0 Series  
2-Station Manifold



## Size 1, 2, & 3 Manifold / Sub-Base Kits

### HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

**R** **PS4011** **55** **M** **C** **P**

Basic Series	
Size 1	PS4011
Size 2	PS4111
Size 3	PS4211

Enclosures / Lead Length	
J†	Circuit Board, Single Address
M†	Circuit Board, Double Address

† Not Available with Subbase Kits.

#### Note:

When using the Enclosure / Lead Length "J" or "M" option:

- 12 volts DC - Maximum number of coils is 13
- 24 volts DC - Maximum number of coils is 21
- 120 volts AC - Coils limited by the number of pins available in the connector  
(25-Pin D-Sub = 24 coils, 19-Pin Brad Harrison = 16, 12-Pin M23 = 8)
- 240 volts AC - Must use "A" or "C" Option, Lead Wires or Terminal Blocks

Mounting Base Style / Port Size								
Size 1	Sub-base: 3/8 NPT Side Ports	15	Size 2	Sub-base: 1/2 NPT Side Ports	17	Size 3	Sub-base: 3/4 NPT Side Ports	19
	Sub-base: 3/8 BSPP Side Ports	16*		Sub-base: 1/2 BSPP Side Ports	18*		Sub-base: 3/4 BSPP Side Port	10*
	Manifold: 3/8 NPT End Ports	55		Sub-base: 1/2 NPT Bottom / End Port	27		Sub-base: 3/4 NPT Bottom / End Port	29
	Manifold: 3/8 NPT End Ports	56*		Sub-base: 1/2 BSPP Bottom / End Port	28		Sub-base: 3/4 BSPP Bottom / End Port	20
	Manifold: 3/8 NPT Bottom / End Port	65†		Manifold: 1/2 NPT Bottom / End Port	67		Manifold: 3/4 NPT Bottom / End Port	69
Manifold: 3/8 BSPP Bottom / End Port	66*†	Manifold: 1/2 BSPP Bottom / End Port	68*	Manifold: 3/4 BSPP Bottom / End Port	60*			

\* BSPP ISO 1179 Specifications.

† #1 Bottom Port - 1/4".

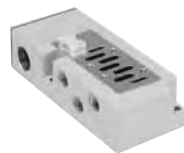
### Sub-Base Kits

Automotive Connectors

Mounted in 1/2" Conduit Port

- 3-Pin - Wired for Single Solenoid
- 4-Pin / 5-Pin - Wired for Double Solenoid

Size 1



Size 2



Size 3



### Manifold Kits

Automotive Connectors

Mounted in Individual Manifold Conduit Cover

- 3-Pin - Wired for Single Solenoid
- 4-Pin / 5-Pin - Wired for Double Solenoid

Size 1



Size 2



Size 3



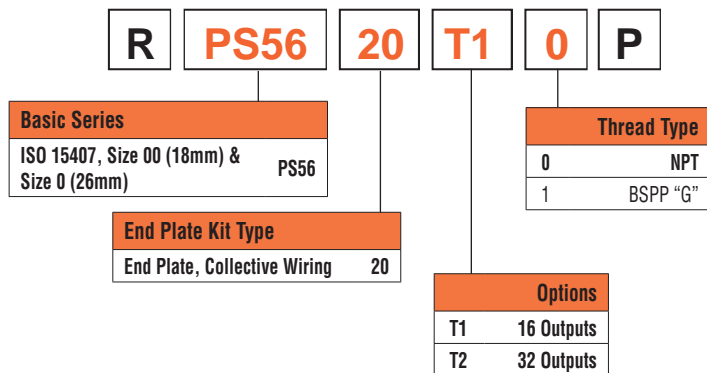
# End Plate Kits, Series W66 & W65

## Series W66

### Size 00 & 0 End Plate Kits

#### HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

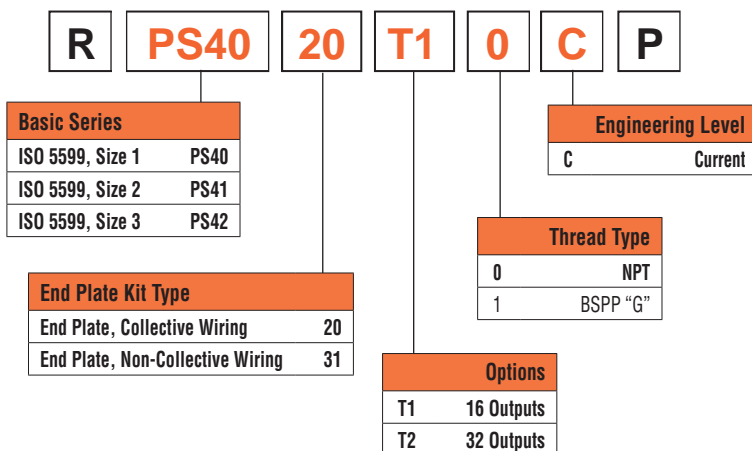


## Series W65

### Size 1, 2, & 3 End Plate Kits

#### HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)





## Blank Stations, Port Isolation, Gaskets

### Blank Station Kits



15407-2

Size	Kit Number	15407-2
Size 00	RPS5634P	
Size 0	RPS5534P	

Kit includes: Blank Station Plate, Gasket, and Mounting Bolts.



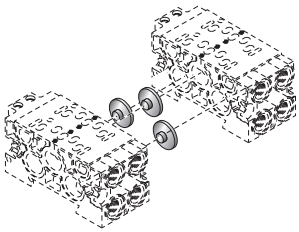
5599

Size	Kit Number	5599
Size 1	RPS4034CP	
Size 2	RPS4134CP	
Size 3	RPS4234CP	

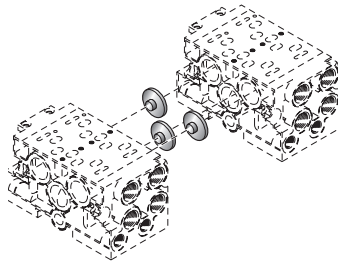
Kit includes: Blank Station Plate, Gasket, and Mounting Bolts.

### Manifold Port Isolation Kits

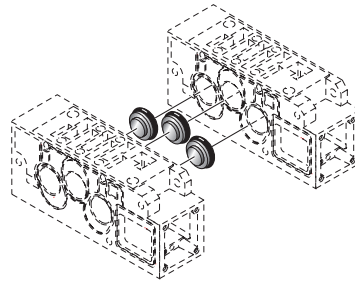
#### Main Galley (1, 3, 5)



Size 00  
Main Galley



Size 0  
Main Galley

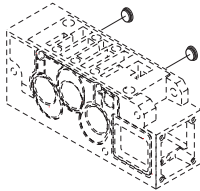


Size 1, 2, 3  
Main Galley

Size	Kit Number
Size 00	RD02BD0
Size 0	RD01BD0
Size 1	RPS4032CP
Size 2	RPS4132CP
Size 3	RPS4232CP

Kit includes: Plugs with O-rings.

#### Pilot Galley

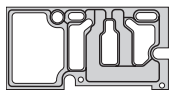


Size 1, 2, 3  
Pilot Galley

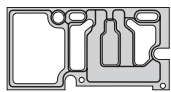
Size	Kit Number
1, 2, & 3	RPS4033CP

Kit includes: Plugs with O-rings.

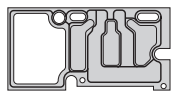
### Manifold to Manifold Gasket Kits



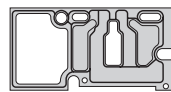
RPS561AP



RPS561BP



RPS561CP



RPS561DP

15407-2				
Size	Standard	Blocked #1 Port	Blocked #1, 3, 5 Ports	Blocked #3, 5 Ports
Size 00	RPS561AP	RPS561BP	RPS561CP	RPS561DP
Size 0				
Size 1	RPS4013P	—	—	—
Size 2	RPS4113P	—	—	—
Size 3	RPS4213P	—	—	—

# Accessories

## Size 00 & 0

### HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

**R** **PS5637** **1** **6** **6** **P**

Basic Series		
Size 00	15407-2, 18mm	<b>PS5638</b>
Size 0	15407-2, 26mm	<b>PS5538</b>

Regulator Function	
Common Pressure Regulator	<b>1</b>
Independent Pressure Regulator	<b>2</b>

#4 Port Regulator / Gauge*	
<b>2</b>	2-60 PSIG w/o Gauge
<b>3</b>	5-125 PSIG w/o Gauge
<b>5</b>	2-60 PSIG w/Gauge
<b>6</b>	5-125 PSIG w/Gauge

#2 Port Regulator / Gauge*	
<b>2</b>	2-60 PSIG w/o Gauge
<b>3</b>	5-125 PSIG w/o Gauge
<b>5</b>	2-60 PSIG w/Gauge
<b>6</b>	5-125 PSIG w/Gauge

\* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

\* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

## Interposed Regulators

### Features:

- Remote Air Pilot Operated for hard-to-reach pressure control
- Unregulated Pilot Pressure to valve for consistent valve shifting regardless of pressure adjustment



Size 00 - 18mm  
(Dual Interposed Regulator Shown)



Size 0 - 26mm  
(Single Interposed Regulator Shown)

## Size 1, 2, & 3

### HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

**R** **PS4037** **1** **6** **6** **C** **P**

Basic Series		
Size 1	5599-1	<b>PS4037</b>
Size 1	5599-2	<b>PS4038</b>
Size 2	5599-1	<b>PS4137</b>
Size 2	5599-1	<b>PS4138</b>
Size 3	5599-1	<b>PS4237</b>
Size 3	5599-1	<b>PS4238</b>

Regulator Function	
Common Pressure Regulator	<b>1</b>
Independent Pressure Regulator	<b>2</b>
Selector Regulator	<b>3</b>

#4 Port Regulator / Gauge*	
<b>0**</b>	Line By-Pass Plate
<b>1</b>	1-30 PSIG w/o Gauge
<b>2</b>	2-60 PSIG w/o Gauge
<b>3</b>	5-125 PSIG w/o Gauge
<b>4</b>	1-30 PSIG w/Gauge
<b>5</b>	2-60 PSIG w/Gauge
<b>6</b>	5-125 PSIG w/Gauge
<b>C</b>	Air Pilot w/60 PSIG Gauge
<b>D</b>	Air Pilot w/160 PSIG Gauge

#2 Port Regulator / Gauge*	
<b>0**</b>	Line By-Pass Plate
<b>1</b>	1-30 PSIG w/o Gauge
<b>2</b>	2-60 PSIG w/o Gauge
<b>3</b>	5-125 PSIG w/o Gauge
<b>4</b>	1-30 PSIG w/Gauge
<b>5</b>	2-60 PSIG w/Gauge
<b>6</b>	5-125 PSIG w/Gauge
<b>C</b>	Air Pilot w/60 PSIG Gauge
<b>D</b>	Air Pilot w/160 PSIG Gauge

\* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

\*\* Pressure Line By-Pass Option can only be used with Independent and Selector Regulators (Option 2 & 3 in Interposed Block Function).



Size 1  
(Dual Interposed Regulator Shown)



Size 2  
(Dual Interposed Regulator Shown)

#### Ordering Components

- Manifold or Subbase Kit required
- Interposed Regulator Kit configured for Internal Pilot as standard
- Order valve as External Pilot

### How to Configure Interposed Regulator / Valve Combinations

**Internal Pilot Configuration** - Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

**External Pilot Configuration** - Size 1, Size 2, Size 3

An External Pilot pressure in Port 12 or 14 of the base feeds thru the Interposed Regulator 12 or 14 galley directly to the 12/14 pilot of the valve.

This configuration takes an External Pilot from the 12 port of the base and passes it thru the regulator to feed the 12 galley of the valve.

\* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

\*\* Pressure Line By-Pass Option can only be used with Independent and Selector Regulators (Option 2 & 3 in Interposed Block Function).

#### WARNING

Double interposed regulators will reverse output ports, the 12 solenoid will pressurize the 4 port, the 14 solenoid will pressurize the 2 port which may cause unexpected, potentially dangerous cylinder movement at valve pressurization.

## Gauge Adapter Kit

Description	Part Number
Gauge Kit	RPS5651160P
1/8" Female to 1/8" Female Coupling	R207P-2*
1/8" Male to 1/8" Male Long Nipple	RVS215PNL-2-15*

\* Included in Gauge Kit RPS5651160P

Included with all Size 00 Regulators. Both kits are required on all Size 0 & 00 Regulators when the Regulator is on the last Station on the Right (14) End.

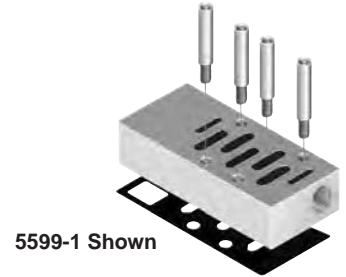


## Remote Pilot Access Plates, Exhaust Modules, Air Supply Bases

### Remote Pilot Access Plate Kits

Size	Port Size	Kit Number	
		NPT	BSPP "G"
Size 1	1/8"	RPS401500CP	RPS401501CP
Size 2	1/8"	RPS411500CP	RPS411501CP
Size 3	1/8"	RPS421500CP	RPS421501CP

Kit includes: Pilot Port Access Plate, Gasket and Mounting Studs.



5599-1 Shown

### Size 1 Auxiliary Access Plate Kits

Size	Port Size	Kit Number	
		NPT	BSPP "G"
Size 1	1/4" & 3/8"	RPS403000CP	RPS403001CP

Kit includes: Pilot Port Access Plate, Gasket and Mounting Screws.  
 • Used on Size 1 Manifolds to provide auxiliary access to Ports 1, 3 & 5.  
 • Port 1: 1/4", Ports 3 & 5: 3/8". Height: .72 Inch



### Interposed Supply & Exhaust Modules

Valve Size		NPT	BSPP "G"
Size 00 (15407-2)	Supply	RPS561600P	RPS561601P
	Exhaust	RPS561700P	RPS561701P
Size 0 (15407-2)	Supply	RPS551600P	RPS551601P
	Exhaust	RPS551700P	RPS551701P

Quantity 1  
 • Used on Size 00 & Size 0 valves to provide a pressure or exhaust path to individual valves.



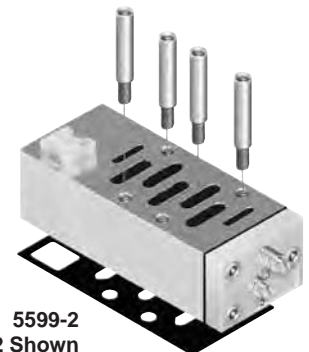
15407-2 Shown

## Interposed Flow Controls

### Features:

- Both adjustment screws are located on the 12 end of the unit.
- Interposed Flow Control mounts with its own studs, which means the valve uses standard bolts for mounting.
- Interposed Flow Control is not to be used as a shut off device and is not bubble tight when needles are fully turned down.

Valve Size	Plug-In 5599-2
Size 1	RPS4035CP
Size 2	RPS4135CP
Size 3	RPS4235CP



Plug-In 5599-2  
Size 2 Shown

*A Interposed Flow Control and Common Port Interposed Regulator may be sandwiched together on a manifold or subbase. The Interposed Flow Control MUST be located between the manifold/subbase and the Common Port Interposed Regulator.*

# Service & Repair Kits

## Series W65 Replacement Pilot Assembly & Coil

Description	Model Number
Pilot Assembly	1149C79
Coil	334B33

Specify Voltage and Hz when ordering.

## Manifold Hardware Kits

Valve Size	Kit Number
Size 00	RPS5612P
Size 0	RPS5512P
Size 1	RPS4012P
Size 2	RPS4112P
Size 3	RPS4212P

Quantity 12

## Valve Bolt Kits

Valve Size	Kit Number
Size 00	RPS5687P
Size 0	RPS5587P

Quantity 12

## Regulator Kits

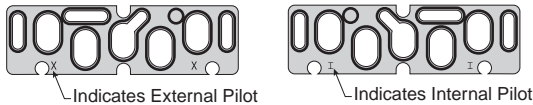
Valve Size	Kit Number
Size 1	RPS4039P
Size 2 & 3	RPS4139P

## Pilot Select Gasket Kits

Valve Size	Kit Number
Size 00	RPS5605P
Size 0	RPS5505P

Quantity 10

Size 00 Shown



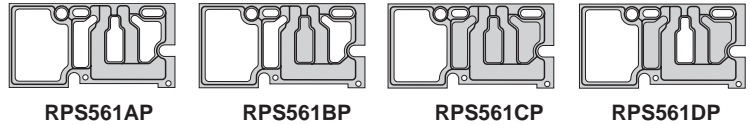
## Valve to Base Gasket Kits

Valve Size	Standard
Size 00	RPS5605P*
Size 0	RPS5505P*
Size 1	797B11
Size 2	828B11
Size 3	858B11

Quantity 1, \* Quantity 10.

## Manifold to Manifold Gasket Kits

15407-2				
Size	Standard	Blocked #1 Port	Blocked #1, 3, 5 Ports	Blocked #3, 5 Ports
Size 00	RPS561AP	RPS561BP	RPS561CP	RPS561DP
Size 0				
Size 1	RPS4013P	—	—	—
Size 2	RPS4113P	—	—	—
Size 3	RPS4213P	—	—	—



## Regulator & Flow Control Mounting Studs

Type	Size 00	Size 0	
Flow Control	RPS5636P	RPS5536P	
Regulator	RPS5636P	RPS5536P	
Type	Size 1	Size 2	Size 3
Flow Control	RPS4036P	RPS4136P	RPS4236P
Regulator	RPS4040P	RPS4140P	RPS4240P

Quantity 12

## Regulator Gauge Kits – Size 1, 2 & 3

Gauge Type	Kit Number
<b>3/4" Face Air - Standard</b>	
0-60 PSIG	RPS4051060BP
0-160 PSIG	RPS4051160BP
<b>1-1/2" Face Air - Large*</b>	
0-60 PSIG	RPS4053060BP
0-160 PSIG	RPS4053160BP
<b>1-1/2" Face Liquid*</b>	
0-160 PSIG	RPS4052160BP

\* Includes brass pipe fitting extensions

Quantity 1

## Body Service Kits

Valve Size	2 Position Single	2 Position Double	3-Position		
			Closed Center	Open Center	Power Center
Size 00	RPS5601P	RPS5601P	RPS5602P	RPS5603P	RPS5604P
Size 0	RPS5501P	RPS5501P	RPS5502P	RPS5503P	RPS5504P
Size 1	1422K77	1423K77	1424K77	1425K77	1424K77
Size 2	1467K77	1468K77	1469K77	1470K77	1469K77
Size 3	1471K77	1472K77	1473K77	1474K77	1473K77

**Kit Includes:** Spool assembly with seals, all piston seals, return spring, pilot selector gasket, coil to end cap gasket.

Quantity 1



## Regulator Conversion Kits

Valve Size	Manual Bonnet Assembly (w/o Spring)	Air Pilot Bonnet Assembly	Independent By-Pass Plate
Size 1	RPS4045BP	RPS4047BP	RPS4048BP
Size 2	RPS4145BP	RPS4147BP	RPS4148BP
Size 3			

Quantity 1

## Regulator Spring Range Kits

Spring Range	Size 1	Size 2 & 3
0 to 30 PSIG	RPS4050030P	RPS4150030BP
2 to 60 PSIG	RPS4050060P	RPS4150060BP
5 to 125 PSIG	RPS4050125P	RPS4150125BP

Quantity 1

## Technical Information

### Temperature Rating

Size 00, 0, 1, 2, & 3
-15°C to 49°C (5°F to 120°F) Ambient.

### Flow Rating (Cv)

Valve Size	Port Size	2-Position	3-Position
Size 00	1/8"	0.55	0.50
Size 0	1/4"	1.1	1.0
Size 1	3/8"	1.0	1.0
Size 2	1/2"	2.3	2.3
Size 3	3/4"	3.4	3.4

Cv tested per ANSI / (NFPA) T3.21.3

### Response Time\*\* (ms)

Valve Size	Port Size	0 Cu. In. Chamber		## Cu. In. Chamber	
		Fill	Exhaust	Fill	Exhaust
<b>Single Solenoid 2-Position - Air Return / Spring Assist</b>					
Size 00	1/8"	28	30	141	154
Size 0	1/4"	24	26	77	124
Size 1†	3/8"	—	—	—	—
Size 2†	1/2"	—	—	—	—
Size 3†	3/4"	—	—	—	—

## Size 00 (12), Size 0 (25)

\*\* With 100 PSIG supply, time (ms) required to fill from 0 to 90 PSIG and Exhaust from 100 PSIG to 10 PSIG measured from the instant of energizing or de-energizing 24VDC solenoid.

† For valve response time information for Size 1, 2, & 3 valves, see ROSS Bulletin 379B - form # A10090.

Tested per ANSI / (NFPA) T3.21.8

### Operating Pressure

Size 00, 0, 1, 2, & 3			
<b>Maximum:</b> 145 PSIG (1000 kPa)			
<b>Minimum:</b>			
Internal Pilot	PSIG (Min. kPa) Series W66, Size 00	PSIG (Min. kPa) Series W66, Size 0	See pages 13 & 14 for Sizes 1, 2 & 3
Single Solenoid - 2-Position	30 (207)	25 (173)	
Double Solenoid - 2-Position			
Single Remote Pilot - 2-Position **	Vacuum	Vacuum	
Double Remote Pilot - 2-Position**	Vacuum	Vacuum	
Double Solenoid - 3-Position (CC, OC, PC)	35 (241)	35 (241)	
Double Remote Pilot - 3-Position** (CC, OC, PC)	Vacuum	Vacuum	
Single Solenoid Pilot - 2-Position Air Return / Spring Assist	30 (207)	30 (207)	
Single Remote Pilot - 2-Position** Air Return / Spring Assist			
<b>External Pilot *</b>	*	*	
All Functions	Vacuum	Vacuum	

\* External Pilot Pressure / Remote Pilot Supply - 45-145 PSIG (310-1000 kPa).

\*\* Must be equal to or greater than operating pressure.

# TURCK Modular Industrial I/O System BL 67

## The BL67 Solution

BL67 combines all the flexibility of an in-the-cabinet PLC I/O system with modularity, ruggedness and connectorization.

BL67 complements the AIM™, BL20 and piconet® product families to meet the needs of unique applications, such as small machine or conveyor systems requiring IP 67 protection.

## The BL67 Concept

The BL67 modular concept is a very flexible approach to connectorized I/O. The gateway, base and electronic modules provide many benefits to the user.

- The gateway provides communication between the fieldbus and I/O modules; modules are not dependent on the fieldbus protocol.
- DIN-rail or frame mountable base modules are available with eurofast® (M12), minifast® (7/8-16UN), M23 and picofast® (M8) connectors.
- Electronic modules are hot swappable.
- Power distribution module (24 volts DC) supplies the connected I/O signals.

BL67's openness, flexibility, connectorization, compact housing and ruggedness provide a viable alternative to in-the-cabinet I/O.

## Maximum Size of a BL67 Station

BL67 stations consist of a gateway and a maximum of 32 modules (equivalent to 1 m station length). Some high-tech and analog I/O modules may consume or produce large amounts of data, and therefore may limit the number of modules that may be used per system. It is highly recommended that the I/O Assistant software is used when planning and commissioning BL67 systems. This program allows you to build the BL67 node on your computer and verify that all restrictions with regard to power and size are met. The free I/O assistant software is available for download from [www.turck.com](http://www.turck.com).

## Addressing

As a node on a network, BL67 stations are addressed dependent on the network system being used. Each network gateway has a set of rotary switches used to set the address for the node. DeviceNet™ and CANopen gateways may be addressed between 0 and 63 via two switches (one for the 10's digit and one for the 1's digit). For example, to set the address to 37 you would set the 10's switch to 3 and the 1's switch to 7. The third switch on the gateway may be used to set the communication rate of the network interface. PROFIBUS®-DP gateways may be set from 1 to 125 by using three switches (one for the 100's, one for the 10's and one for the 1's).

Ethernet gateways allow different addressing schemes depending on the Ethernet addressing method being used in the overall system. Dynamic addressing schemes include BootP and DHCP, while hard-coding a static address is also allowed.

## BL67 Power Distribution

### Power Overview

The power supply for a BL67 station is fed via the power connector on the PROFIBUS® gateway or directly from the network on the DeviceNet™ gateway. Power feeder modules can be added to the system at any point to provide a fresh isolated supply of power to all I/O connected to its right.

### Internal Power Consumption via Module Bus

The amount of BL67 modules that may be supplied via the internal module bus depends on the respective nominal current IMB of the individual modules on the module bus. The sum of the nominal current inputs of the connected BL67 module must not exceed 1.5 A. If the I/O assistant software is used, an error message is generated automatically via the <Station - Verify> as soon as the system supply via the module bus is no longer sufficiently guaranteed.

Module	Nominal 1 Current at 5 V IMB	Effective Draw 2 from Gateway at 24 VDC IMB(24)	Nominal 3 Current from VI	Nominal 4 Current from VO
BL67-GW-DPV1	–	≤150 mA		
BL67-GW-DN	–	≤100 mA		
BL67-PF-24VDC	≤30 mA	≤9 mA		
BL67-4DI-P	≤30 mA	≤9 mA	≤40 mA	
BL67-8DI-P	≤30 mA	≤9 mA	≤40 mA	
BL67-4DO-0.5A-P	≤30 mA	≤9 mA		≤100 mA
BL67-4DO-2A-P	≤30 mA	≤9 mA		≤100 mA
BL67-8DO-0.5A-P	≤30 mA	≤9 mA		≤100 mA
BL67-2AI-V	≤35 mA	≤10 mA	≤12 mA	
BL67-2AI-I	≤35 mA	≤10 mA	≤12 mA	
BL67-2AI-TC	≤35 mA	≤10 mA	≤30 mA	
BL67-2AI-PT	≤45 mA	≤13 mA	≤45 mA	
BL67-2AO-I	≤40 mA	≤12 mA		≤50 mA
BL67-2AO-V	≤60 mA	≤17 mA		≤50 mA
BL67-1RS232	≤100 mA	≤28 mA	≤50 mA	
BL67-8XSG-PD	≤30 mA	≤9 mA		≤100 mA
BL67-1SSI	≤50 mA	≤15 mA	≤50 mA	
BL67-4DI-PD	≤30 mA	≤9 mA		≤100 mA
BL67-8DI-PD	≤30 mA	≤9 mA		≤100 mA

To calculate current draw on DeviceNet: Add IMB(24) for all modules. Then add VI and VO for electronic modules to the left of the first power feed module. Next, add the current draw of the I/O devices.

To calculate current draw on PROFIBUS gateway power connector for VI: Add IMB for all modules. Then add VI current for all modules to the left of the first power feed module. Next, add the current draw of the input devices.

For VO, add the VO current for all modules to the left of the first power feed module. Next, add the current draw of the output devices.

VMB = Module bus power

VI = Input power

VO = Output power

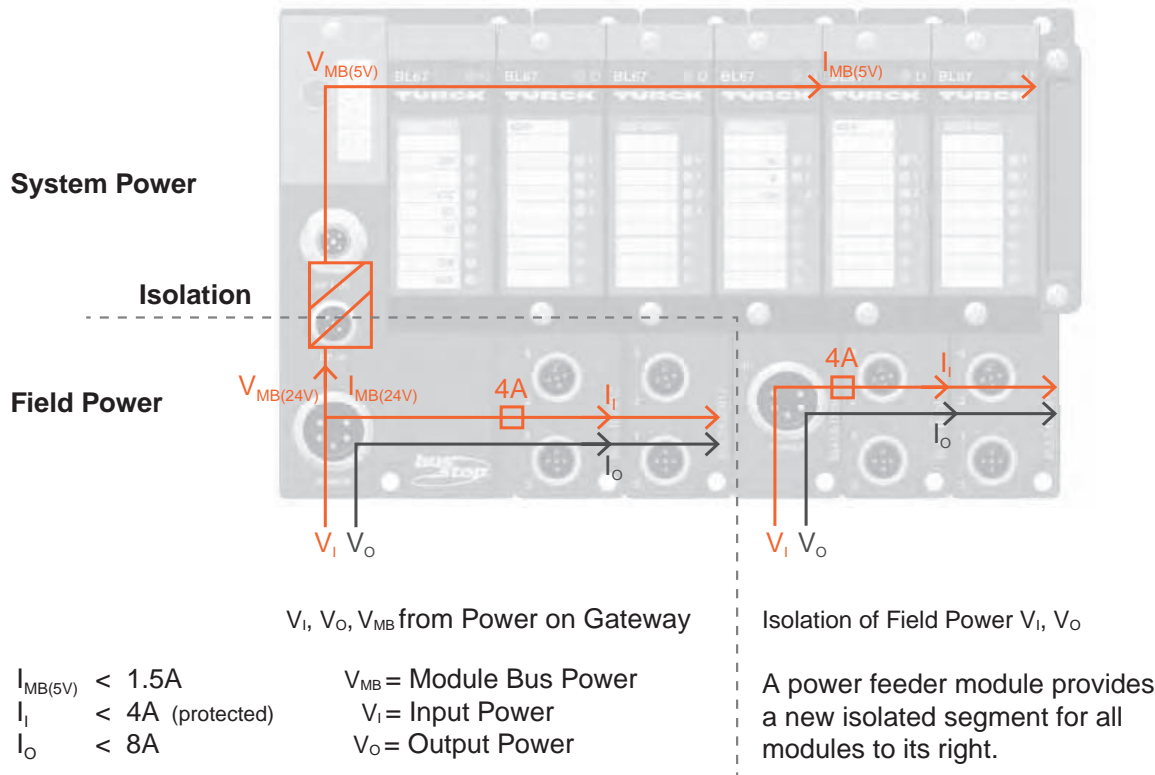
IMB = Module bus current

IMB(24) = Effective current draw from gateway at 24 volts DC supply

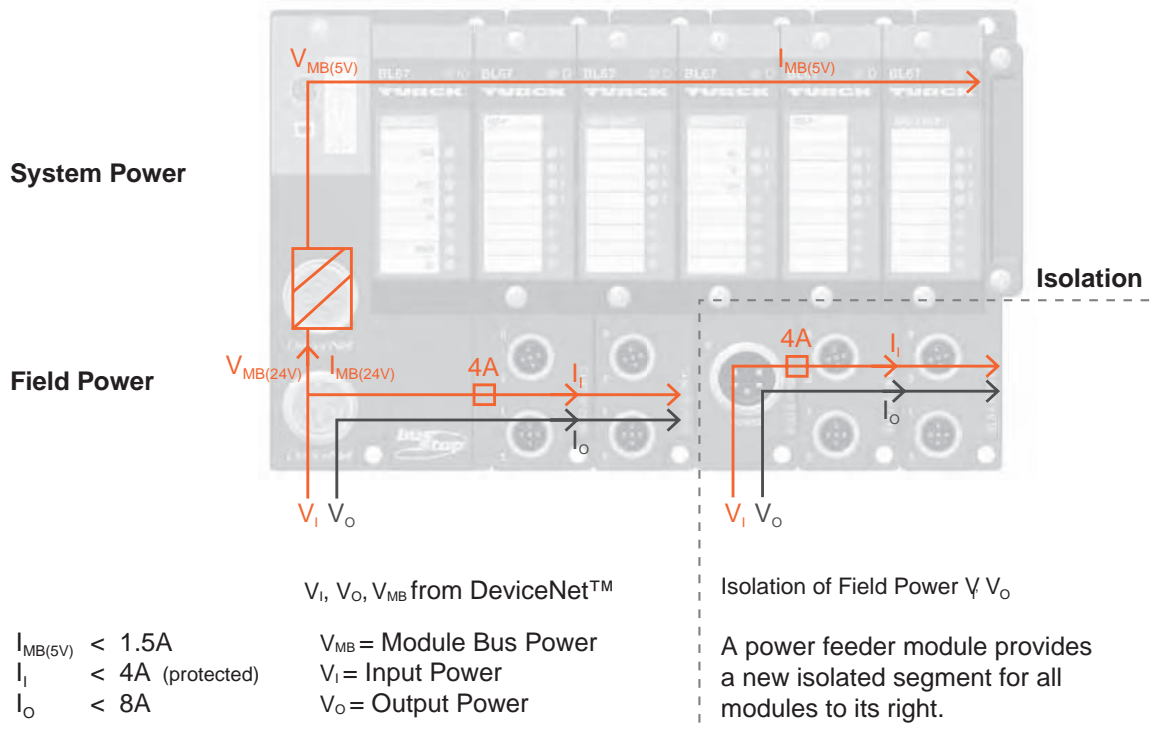
# TURCK Modular Industrial I/O System BL 67

## Applying Power to BL67

PROFIBUS®, Ethernet and CANopen System



## DeviceNet™ System



# TURCK Modular Industrial I/O System BL 67

## Environmental Conditions

### Intended Application Environments

- BL67 does not need an enclosure
- Mount directly on machine or conveyor
- Rugged design provides protection against dirt, dust and liquids

### Not intended for These Environments


- Continuous submersion
- 100 percent humidity
- High pressure washdown


**Note:**

For higher levels of protection consider fully potted AIM stations.

General Environmental	
Potential isolation	Via optocoupler
Operating temperature	32° to +131°F (0° to +55°C)
Storage temperature	-13° to +185°F (-25° to +85°C)
Relative humidity	5 to 95% (indoor), noncondensing
Vibration	1.0 g 5-10 Hz
Shock	15 g
Protection class	IP 67, NEMA 1, 3, 4, 12, 13
Electromagnetic compatibility (EMC)	According to EN 61131-2
Housing material	PC-V0 (Lexan), Nickel plated brass
Approvals	CE
	UL (pending)
	CSA (pending)

## BL 67 Selection Guide

Gateways	Higher Level System	Pages
	DeviceNet	21
	Ethernet	22, 23
	PROFIBUS-DP	24
	CANopen	25, 26

Modules	Type	I/O Direction	Pages
	Discrete	Input	33-34, 36
		Output	29-31, 36
		Input & Output	35
	Analog	Input	40
		Output	42
	Serial	Input & Output	38-39
	Power Feed		43
	Base Modules		44
Accessories		45	



# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## DeviceNet Gateway

BL67-GW-DN

- Electrical:**
- Operating Current: <600 mA from  $V_{MB}$
  - Supply Current: <8 A to I/O (from DeviceNet)
  - Backplane Current: <1.5 A (from DeviceNet)
- Mechanical:**
- Operating Temperature: 0 to +55°C (+32 to +131°F)
  - Protection: IP 67
  - Vibration: 5 g @ 10-500 Hz

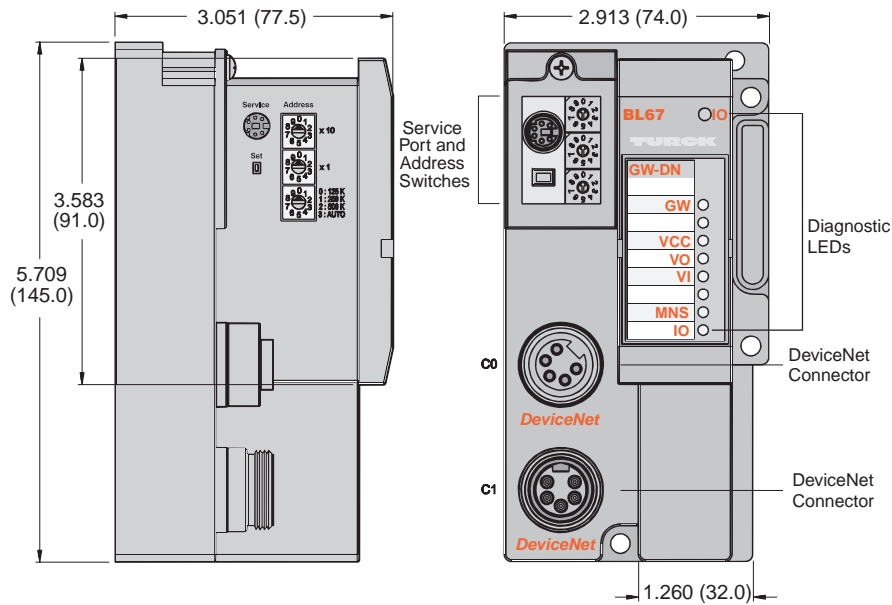
**Material:** • Housing: PC-V0 (Lexan)

### Diagnostics (Logical)

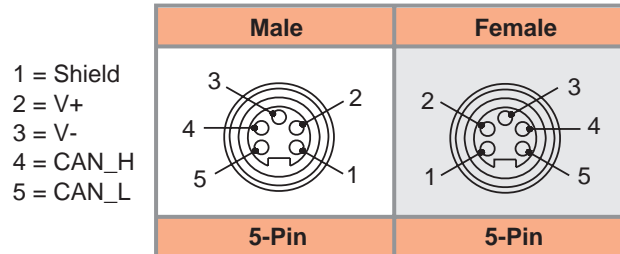
- Diagnostic information available through the DeviceNet I/O map

### Diagnostics (Physical)

- LEDs to indicate status of DeviceNet and Module Bus communication



### DeviceNet minifast® Pinouts



**Note:** Power feeding modules may be used for I/O current supply to prevent overloading the DeviceNet power supply.

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## ModBus TCP/IP Ethernet Gateways

BL67-GW-EN  
BL67-PG-EN

## Ethernet IP Ethernet Gateways

BL67-GW-EN-IP  
BL67-PG-EN-IP



- Electrical:**
- Operating Current: <600 mA from  $V_{MB}$
  - Input Supply Current: <4 A (from  $V_I$ )
  - Output Supply Current: <8 A (from  $V_O$ )
  - Backplane Current: <1.5 A (from  $V_{MB}$ )
- Mechanical:**
- Operating Temperature: -12 to +55°C (-13 to +131°F)
  - Protection: IP 67
  - Vibration: 5 g @ 10-500 Hz

**Material:** • Housing: PC-V0 (Lexan)

### Diagnostics (Logical)

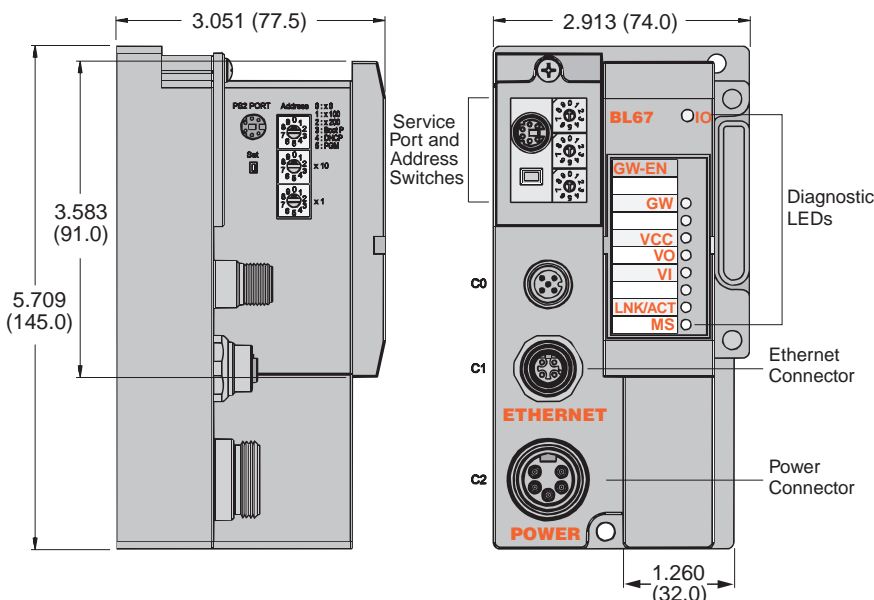
- Diagnostic information available through the DeviceNet I/O map

### Diagnostics (Physical)

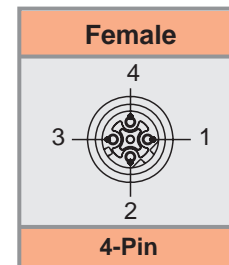
- LEDs to indicate status of DeviceNet and Module Bus communication

### Programmability

- PG in part number designates a programmable gateway
- Programmable according to IEC 61131.3 using CodeSys (includes ladder logic)
- Use CodeSys to create logic programs to control local I/O

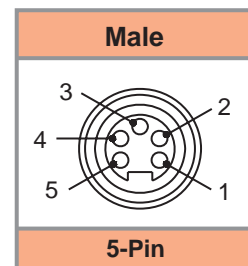


### Ethernet Pinout



- 1 = TD+  
2 = RD+  
3 = TD-  
4 = RD-

### 5-pin minifast® Power Pinout



- 1 = Gnd  
2 = Gnd  
3 = PE  
4 =  $V_I$   
5 =  $V_O$

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## Profinet Ethernet Gateways

BL67-GW-EN-PN



- Electrical:**
- Operating Current: <math>< 600\text{ mA}</math> from  $V_{MB}$
  - Input Supply Current: <math>< 4\text{ A}</math> (from  $V_I$ )
  - Output Supply Current: <math>< 8\text{ A}</math> (from  $V_O$ )
  - Backplane Current: <math>< 1.5\text{ A}</math> (from  $V_{MB}$ )
- Mechanical:**
- Operating Temperature:  $-12$  to  $+55^\circ\text{C}$  ( $-13$  to  $+131^\circ\text{F}$ )
  - Protection: IP 67
  - Vibration:  $5\text{ g}$  @  $10\text{-}500\text{ Hz}$

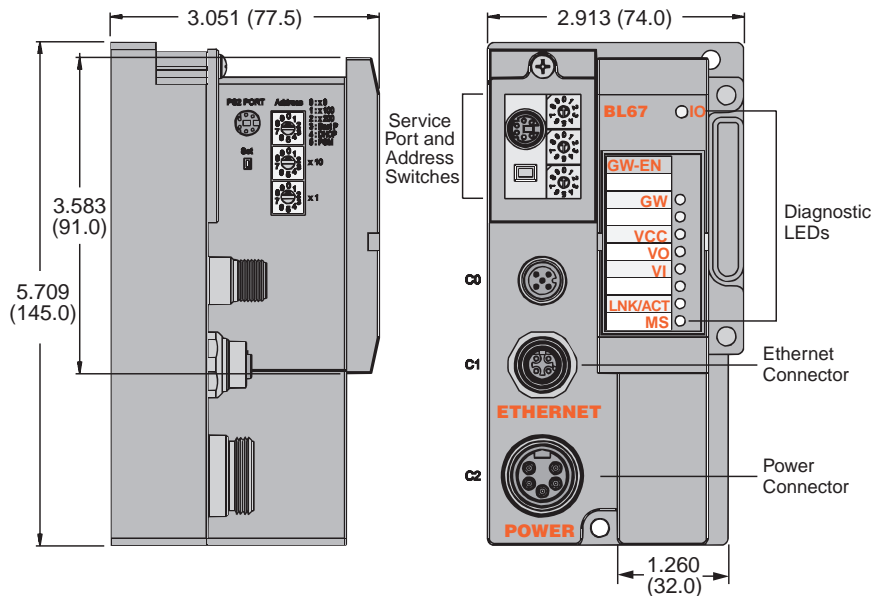
**Material:** • Housing: PC-V0 (Lexan)

### Diagnostics (Logical)

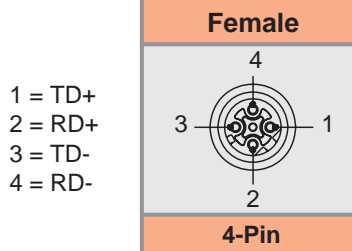
- Diagnostic information available through the DeviceNet I/O map

### Diagnostics (Physical)

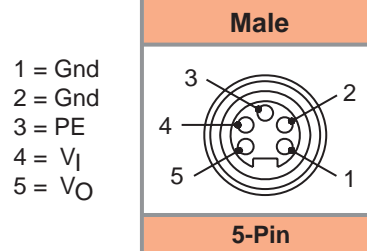
- LEDs to indicate status of DeviceNet and Module Bus communication



### Ethernet Pinout



### 5-pin minifast® Power Pinout



# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## PROFIBUS-DP Gateway

BL67-GW-DPV1  
BL67-PG-DP

- Electrical:**
- Operating Current: <50 mA from  $V_I$
  - Supply Current: <10 A to I/O (from  $V_I$  and  $V_O$ )
  - Backplane Current: <1.5 A (from  $V_I$ )
- Mechanical:**
- Operating Temperature: -25 to +55°C (+32 to +131°F)
  - Protection: IP 67
  - Vibration: 5 g @ 10-500 Hz



**Material:** • Housing: PC-V0 (Lexan)

### Diagnostics (Logical)

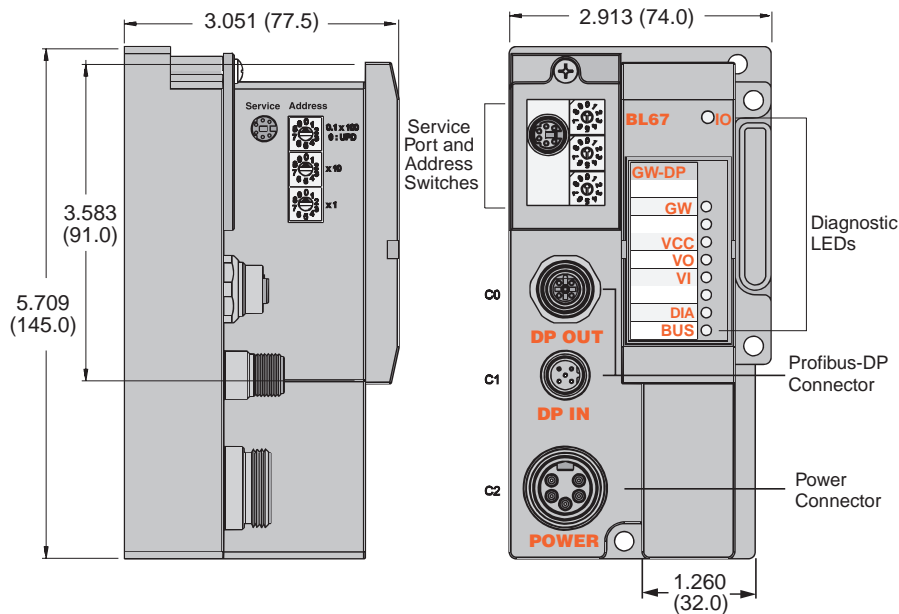
- Diagnostic information available through the DeviceNet I/O map

### Diagnostics (Physical)

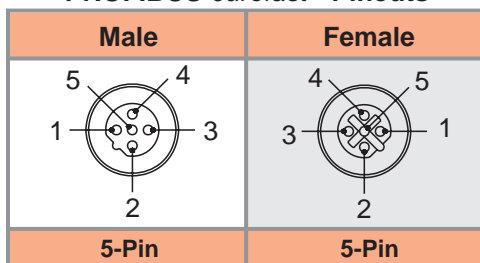
- LEDs to indicate status of DeviceNet and Module Bus communication

### Programmability

- PG in part number designates a programmable gateway
- Programmable according to IEC 61131.3 using CodeSys (includes ladder logic)
- Use CodeSys to create logic programs to control local I/O

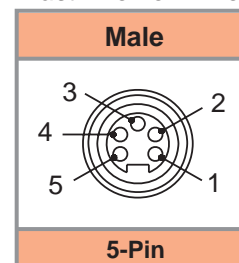


### PROFIBUS eurofast® Pinouts



- 1 = 5 VDC\*
  - 2 = BUS\_A
  - 3 = Gnd
  - 4 = BUS\_B
  - 5 = Shield
- \* Female connector only

### minifast® Power Pinouts



- 1 = Gnd
- 2 = Gnd
- 3 = PE
- 4 =  $V_I$
- 5 =  $V_O$

**Note:** Power feeding modules may be used for I/O current supply to prevent overloading the DeviceNet power supply.

# TURCK Modular Industrial I/O System BL 67

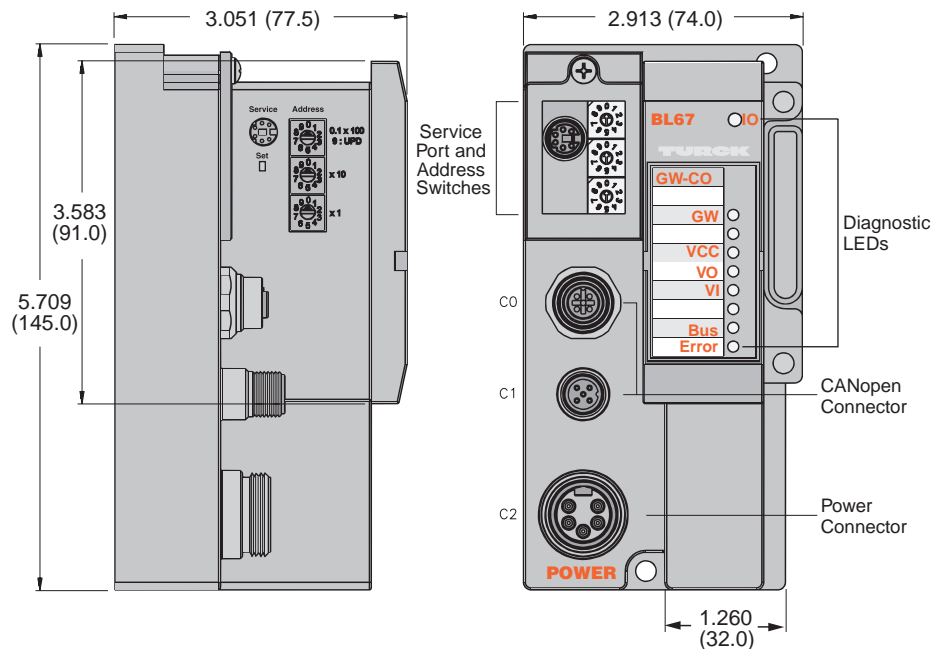
Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



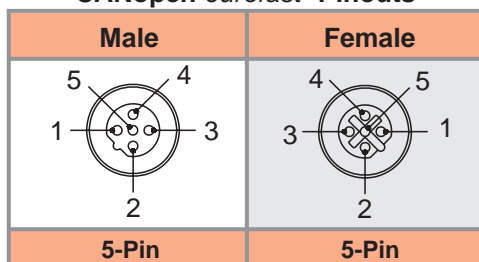
## CANopen Gateway

BL67-GW-CO

- Electrical:**
- Operating Current: <600 mA from  $V_{MB}$
  - Supply Current: <8 A to I/O (from DeviceNet)
  - Backplane Current: <1.5 A (from DeviceNet)
- Mechanical:**
- Operating Temperature: -25 to +55°C (+32 to +131°F)
  - Protection: IP 67
  - Vibration: 5 g @ 10-500 Hz
- Material:**
- Housing: PC-V0 (Lexan)
- Diagnostics (Logical)**
- Diagnostic information available through the DeviceNet I/O map
- Diagnostics (Physical)**
- LEDs to indicate status of DeviceNet and Module Bus communication

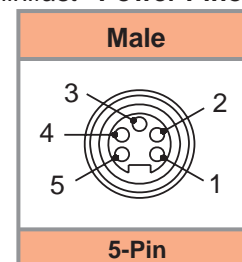


### CANopen eurofast® Pinouts



- 1 = Shield
  - 2 = V+
  - 3 = V-
  - 4 = CAN\_H
  - 5 = CAN\_L
- \* Female connector only

### minifast® Power Pinouts



- 1 = Gnd
- 2 = Gnd
- 3 = PE
- 4 =  $V_i$
- 5 =  $V_o$

**Note:** Power feeding modules may be used for I/O current supply to prevent overloading the DeviceNet power supply.

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## CANopen Gateway

BL67-GW-CO-T

- Electrical:**
- Operating Current: <600 mA from  $V_{MB}$
  - Supply Current: <8 A to I/O (from DeviceNet)
  - Backplane Current: <1.5 A (from DeviceNet)
- Mechanical:**
- Operating Temperature: 0 to +55°C (+32 to +131°F)
  - Protection: IP 67
  - Vibration: 5 g @ 10-500 Hz
- Material:**
- Housing: PC-V0 (Lexan)

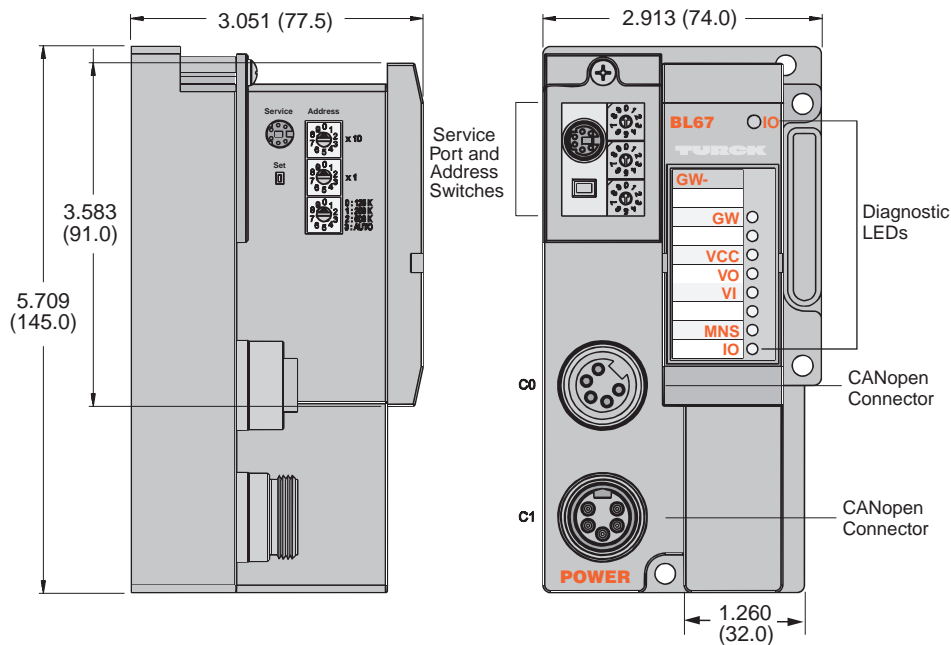


### Diagnostics (Logical)

- Diagnostic information available through the DeviceNet I/O map

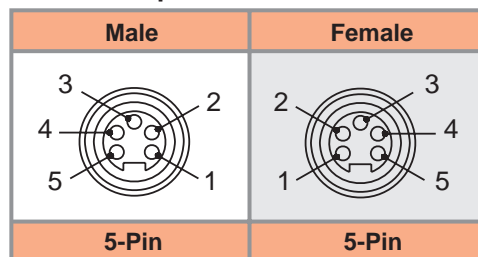
### Diagnostics (Physical)

- LEDs to indicate status of DeviceNet and Module Bus communication



### CANopen minifast® Pinouts

- 1 = Shield
- 2 = V+
- 3 = V-
- 4 = CAN\_H
- 5 = CAN\_L





# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## 4 Discrete Input Modules

BL67-4DI-P  
BL67-4DI-N

**Electrical:**

- Operating Current: <math><30\text{ mA}</math> from  $V_{MB}$
- <math><40\text{ mA}</math> from  $V_I$  (...-P)
- <math><1\text{ mA}</math> from  $V_I$  (...-N)

**Power Distribution:**

- Inputs:  $V_I$
- Logic:  $V_{MB}$  and  $V_I$

**Material:**

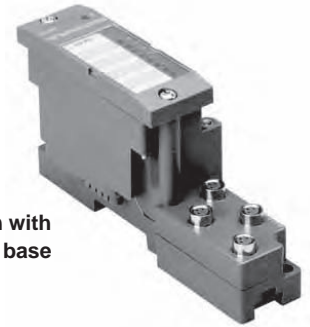
- Connectors: Nickel-plated brass
- Housing: PC-VO (Lexan)

**Diagnostics (Logical):** Diagnostic information available through the fieldbus gateway

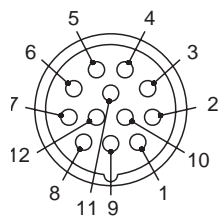
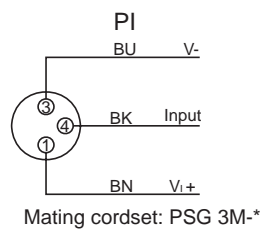
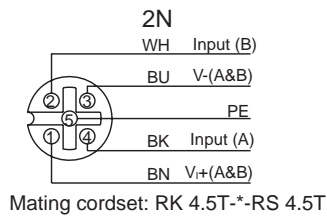
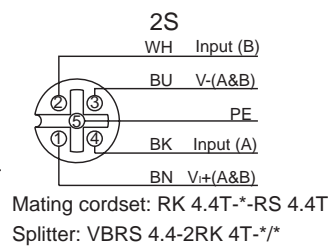
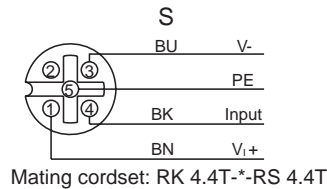
**Diagnostics (Physical):**

- LED to indicate module bus communication status as well as I/O diagnostics
- LEDs for each I/O point to indicate on/off status

Shown with  
BL67-B-4MB base

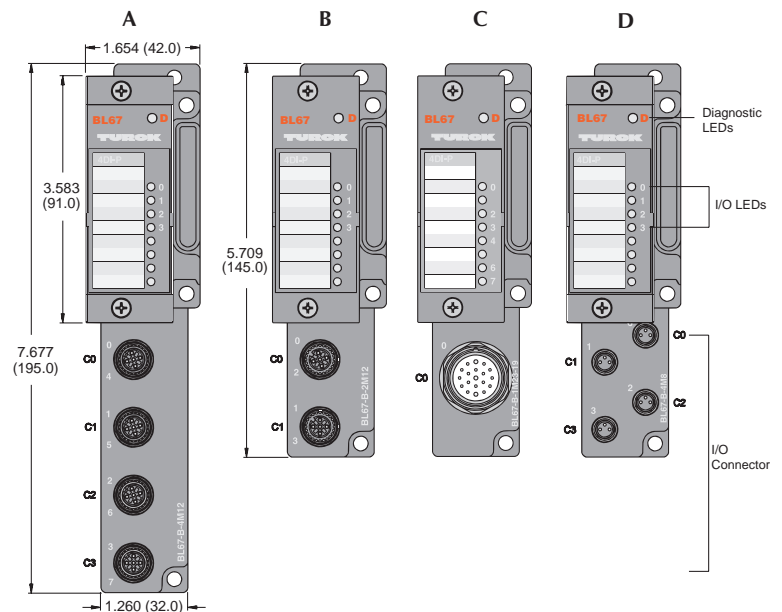


### Input Connectors



**M23-4I**

1 = Input <sub>1</sub>	5 = NC	9 = V <sub>1</sub> <sup>+</sup>
2 = Input <sub>2</sub>	6 = NC	10 = V <sub>1</sub> <sup>+</sup>
3 = Input <sub>3</sub>	7 = NC	11 = V <sub>1</sub> <sup>+</sup>
4 = Input <sub>4</sub>	8 = NC	12 = V-



### I/O Data Map 1

Out	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
n-1	(Data for modules to the left)								
n	Data for next discrete modules			I-1	I-2	I-3	I-0		
n+1	(Data for modules to the right)								

Part Number	Drawing	Input Count	Connectors	Pinout	Inputs					Data I/O Map
					Inputs per Connector	Sensor Style	Group Diagnostics	Individual Diagnostics	Wire-Break Detection	
BL67-4DI-P with BL67-B-4M12*	A	4	0-3	S	1	PNP	X			1
BL67-4DI-P with BL67-B-2M12*	B	4	0-1	2S	2	PNP	X			1
BL67-4DI-P with BL67-B-2M12-P*	B	4	0-1	2S	2	PNP	X			1
BL67-4DI-P with BL67-B-4M8*	D	4	0-3	PI	1	PNP	X			1
BL67-4DI-P with BL67-B-1M23*	C	4	0	M23-4I	4	PNP	X			1
BL67-4DI-N with BL67-B-4M12*	A	4	0-3	S	1	NPN	X			1
BL67-4DI-N with BL67-B-2M12*	B	4	0-1	2N	2	NPN	X			1
BL67-4DI-N with BL67-B-2M12-P*	B	4	0-1	2N	2	NPN	X			1
BL67-4DI-N with BL67-B-4M8*	D	4	0-3	PI	1	NPN	X			1
BL67-4DI-N with BL67-B-1M23*	C	4	0	M23-4I	4	NPN	X			1

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles

## 8 Discrete Input Modules

BL67-8DI-P  
BL67-8DI-N



Shown with BL67-B-4M12 base

**Electrical:**

- Operating Current: <math><30\text{ mA}</math> from  $V_{MB}$
- <math><40\text{ mA}</math> from  $V_I (...-P)$
- <math><1\text{ mA}</math> from  $V_I (...-N)$

**Power Distribution:**

- Inputs:  $V_I$
- Logic:  $V_{MB}$

**Mechanical:**

- Operating Temperature: 0 to +55°C (+32 to +131°F)
- Protection: NEMA 1,3,4,12,13 / IEC IP 67
- Vibration: 5 g @ 10-500 Hz

**Material:**

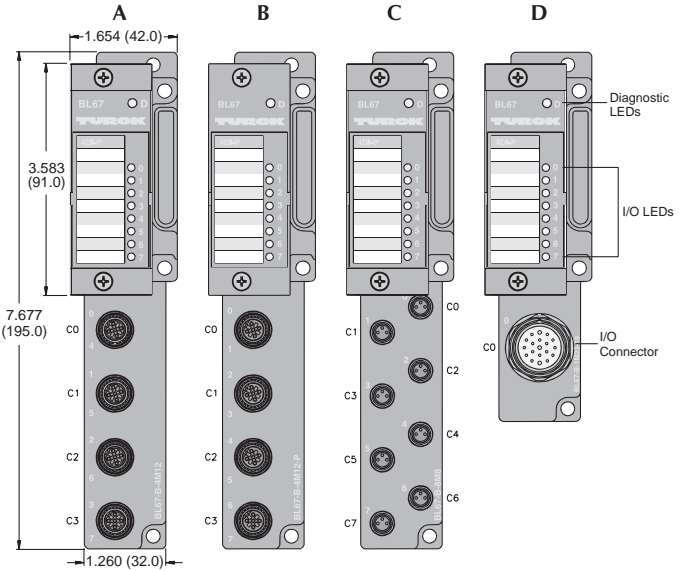
- Connectors: Nickel-plated brass
- Housing: PC-VO (Lexan)

### Diagnostics (Logical):

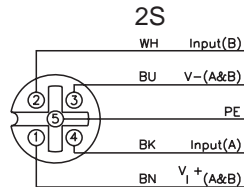
- Diagnostic information available through the fieldbus gateway

### Diagnostics (Physical):

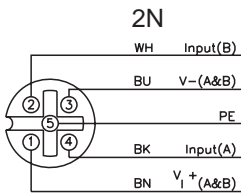
- LED to indicate module bus communication status as well as I/O diagnostics
- LEDs for each I/O point to indicate on/off status



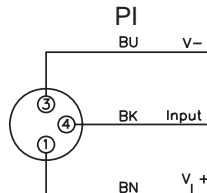
### Input Connectors



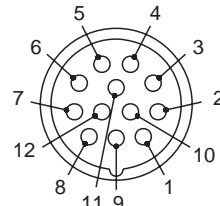
Mating cordset: RK 4.4T-\*RS 4.4T  
Splitter: VBRS 4.4-2RK 4T-\*/\*



Mating cordset: RK 4.5T-\*RS 4.5T



Mating cordset: PSG 3M-\*



M23-8I

1 = Input <sub>0</sub>	5 = Input <sub>4</sub>	9 = V <sub>I</sub> <sup>+</sup>
2 = Input <sub>1</sub>	6 = Input <sub>5</sub>	10 = V <sub>I</sub> <sup>+</sup>
3 = Input <sub>2</sub>	7 = Input <sub>6</sub>	11 = V <sub>I</sub> <sup>+</sup>
4 = Input <sub>3</sub>	8 = Input <sub>7</sub>	12 = V-

### I/O Data Map 1

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
In	n-1	(Data for modules to the left)							
	n	I-7	I-6	I-5	I-4	I-3	I-2	I-1	I-0
	n+1	(Data for modules to the right)							

### Application:

TURCK splitter box: 8MB12Z-4PZ-CS12  
Cable: CSWM CKWM 12-10-\*S101/BL67

Part Number	Inputs									Data I/O Map
	Drawing	Input Count	Connectors	Pinout	Inputs per Connector	Sensor Style	Group Diagnostics	Individual Diagnostics	Wire-Break Detection	
BL67-8DI-P with BL67-B-4M12*	A	8	0-3	2S	2	PNP	X			1
BL67-8DI-P with BL67-B-4M12-P*	B	8	0-3	2S	2	PNP	X			1
BL67-8DI-P with BL67-B-8M8*	B	8	0-7	PI	1	PNP	X			1
BL67-8DI-P with BL67-B-1M23	D	8	0	M23-8I	8	PNP	X			1
BL67-8DI-N with BL67-B-4M12*	A	8	0-3	2N	2	PNP	X			1
BL67-8DI-N with BL67-B-4M12-P*	B	8	0-3	2N	2	NPN	X			1
BL67-8DI-N with BL67-B-8M8*	C	8	0-7	PI	1	NPN	X			1
BL67-8DI-N with BL67-B-1M23	D	8	0	M23-8I		NPN	X			1

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles

## 4 Discrete Output Modules BL67-4DO-0.5A-P



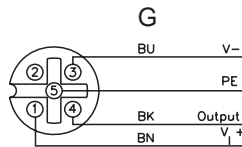
Shown with BL67-B-4M12 base

- Electrical:**
- Operating Current: <math><30\text{ mA}</math> from  $V_{MB}$
  - <math><100\text{ mA}</math> from  $V_O$
  - Output Current: <math><0.5\text{ A}</math> per output from  $V_O$
- Power Distribution:**
- Inputs:  $V_O$
  - Logic:  $V_{MB}$  and  $V_O$

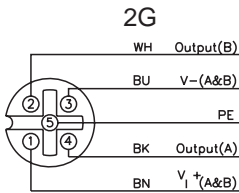
- Material:**
- Connectors: Nickel-plated brass
  - Housing: PC-VO (Lexan)

- Diagnostics (Logical):**
- Diagnostic information available through the fieldbus gateway
- Diagnostics (Physical):**
- LED to indicate module bus communication status as well as I/O diagnostics
  - LEDs for each I/O point to indicate on/off status

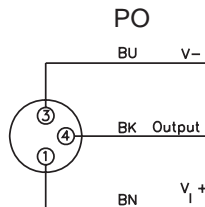
### Outputs Connectors



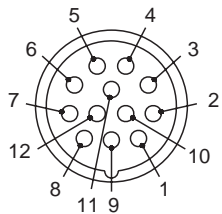
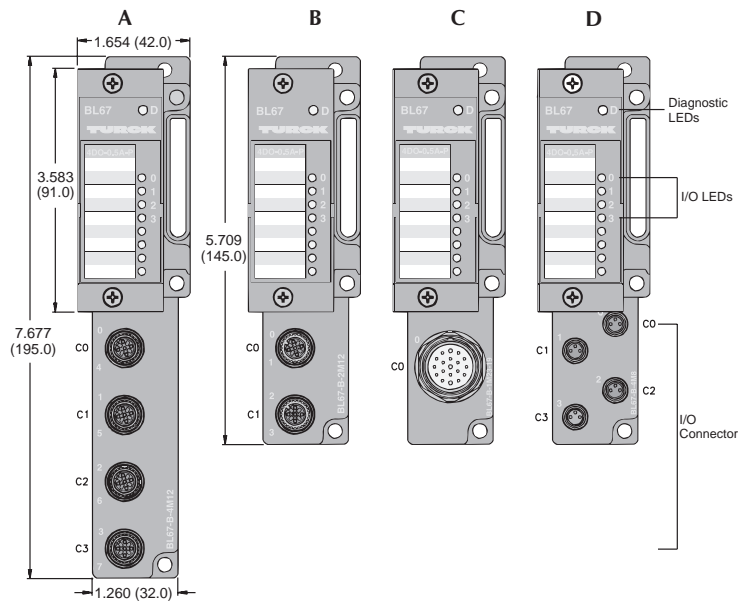
Mating cordset: RK 4.4T-\*RS 4.4T



Mating cordset: RK 4.4T-\*RS 4.4T  
Splitter: VBRS 4.4-2RK 4T-\*/\*



Mating cordset: PSG 3M-\*



### M23-4O

- 1 = Output<sub>0</sub>
- 2 = Output<sub>1</sub>
- 3 = Output<sub>2</sub>
- 4 = Output<sub>3</sub>
- 5 = NC
- 6 = NC
- 7 = NC
- 8 = NC
- 9 = V<sub>I+</sub>
- 10 = V<sub>I+</sub>
- 11 = V<sub>I+</sub>
- 12 = V<sub>-</sub>

### I/O Data Map 1

Out	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
n-1	(Data for modules to the left)								
n	Data for next discrete modules			0-3	0-2	0-1	0-0		
n+1	(Data for modules to the right)								

Part Number	Drawing	Output Count	Connectors	Pinout	Outputs				Individual Diagnostics	I/O Map
					Outputs per Connector	Current	Style	Data		
BL67-4DO-0.5A-P with BL67-B-4M12*	A	4	0-3	G	1	0.5 A	Source		1	
BL67-4DO-0.5A-P with BL67-B-2M12*	B	4	0-1	2G	2	0.5 A	Source		1	
BL67-4DO-0.5A-P with BL67-B-2M12-P*	B	4	0-1	2G	2	0.5 A	Source		1	
BL67-4DO-0.5A-P with BL67-B-4M8*	D	4	0-3	PO	1	0.5 A	Source		1	
BL67-4DO-0.5A-P with BL67-B-1M23*	C	4	0	M23-4O	4	0.5 A	Source		1	

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles

## 4 Discrete Output Modules

BL67-4DO-2A-P  
BL67-4DO-2A-N



- Electrical:**
- Operating Current: <30 mA from  $V_{MB}$   
<100 mA from  $V_O$
  - Output Current: <2 A per output from  $V_O$
- Power Distribution:**
- Inputs:  $V_O$
  - Logic:  $V_{MB}$  and  $V_O$

- Material:**
- Connectors: Nickel-plated brass
  - Housing: PC-VO (Lexan)

**Diagnostics (Logical):**

- Diagnostic information available through the fieldbus gateway

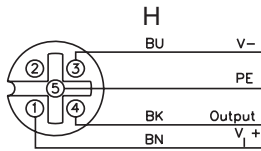
**Diagnostics (Physical):**

- LED to indicate module bus communication status as well as I/O diagnostics
- LEDs for each I/O point to indicate on/off status

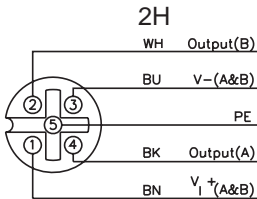
Shown with BL67-B-2M12 base



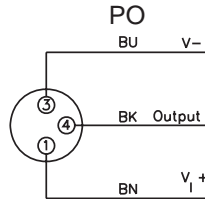
**Input Connectors**



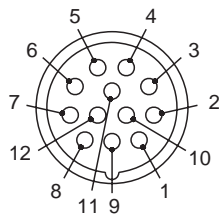
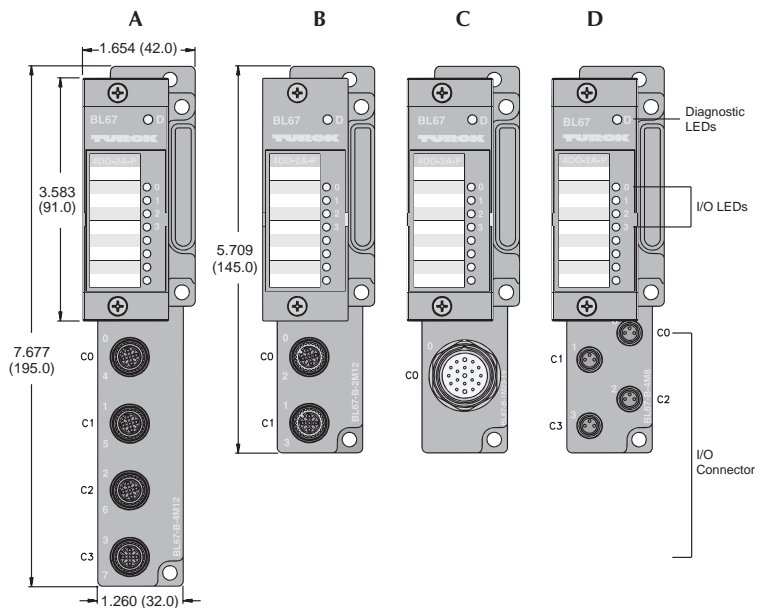
Mating cordset: RK 4.5T-\*RS 4.5T



Mating cordset: RK 4.4T-\*RS 4.4T  
Splitter: VBRS 4.4-2RK 4T-\*/\*



Mating cordset: PSG 3M-\*



**M23-4O**

- 1 = Output<sub>0</sub>    5 = NC    9 =  $V_{I+}$
- 2 = Output<sub>1</sub>    6 = NC    10 =  $V_{I+}$
- 3 = Output<sub>2</sub>    7 = NC    11 =  $V_{I+}$
- 4 = Output<sub>3</sub>    8 = NC    12 =  $V_{-}$

**I/O Data Map 1**

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Out	n-1	(Data for modules to the left)							
	n	Data for next discrete modules		0-3	0-2	0-1	0-0		
	n+1	(Data for modules to the right)							

Part Number	Drawing	Output Count	Connectors	Pinout	Outputs			Individual Diagnostics	I/O Map
					Outputs per Connector	Current	Style		
BL67-4DO-2A-P with BL67-B-4M12*	A	4	0-3	H	1	2 A	Source	1	
BL67-4DO-2A-P with BL67-B-2M12*	B	4	0-1	2H	2	2 A	Source	1	
BL67-4DO-2A-P with BL67-B-2M12-P*	C	4	0-1	2H	2	2 A	Source	1	
BL67-4DO-2A-P with BL67-B-4M8*	D	4	0-3	PO	1	2 A	Source	1	
BL67-4DO-2A-P with BL67-B-1M23*	C	4	0	M23-4O	4	2 A	Source	1	
BL67-4DO-2A-N with BL67-B-4M12*	A	4	0-3	H	1	2 A	Sink	1	
BL67-4DO-2A-N with BL67-B-2M12*	B	4	0-1	2H	2	2 A	Sink	1	
BL67-4DO-2A-N with BL67-B-2M12-P*	C	4	0-1	2H	2	2 A	Sink	1	
BL67-4DO-2A-N with BL67-B-4M8*	D	4	0-1	PO	1	2 A	Sink	1	
BL67-4DO-2A-N with BL67-B-1M23*	C	4	0	M23-4O	4	2 A	Sink	1	



# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## 8 Discrete Output Modules BL67-8DO-0.5A-P

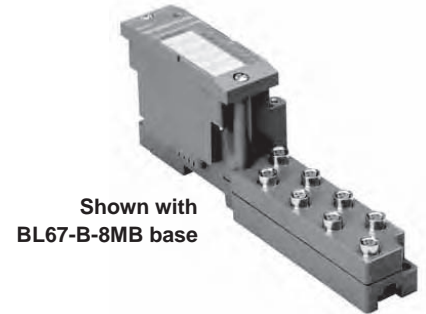
- Electrical:**
- Operating Current: <30 mA from  $V_{MB}$   
<100 mA from  $V_O$
  - Output Current: <0.5 A per output from  $V_O$

- Power Distribution:**
- Inputs:  $V_O$
  - Logic:  $V_{MB}$  and  $V_O$

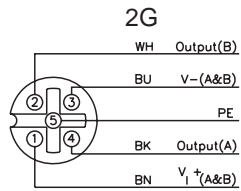
- Material:**
- Connectors: Nickel-plated brass
  - Housing: PC-VO (Lexan)

- Diagnostics (Logical):**
- Diagnostic information available through the fieldbus gateway

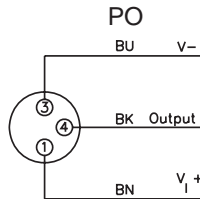
- Diagnostics (Physical):**
- LED to indicate module bus communication status as well as I/O diagnostics
  - LEDs for each I/O point to indicate on/off status



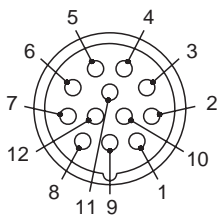
### Outputs Connectors



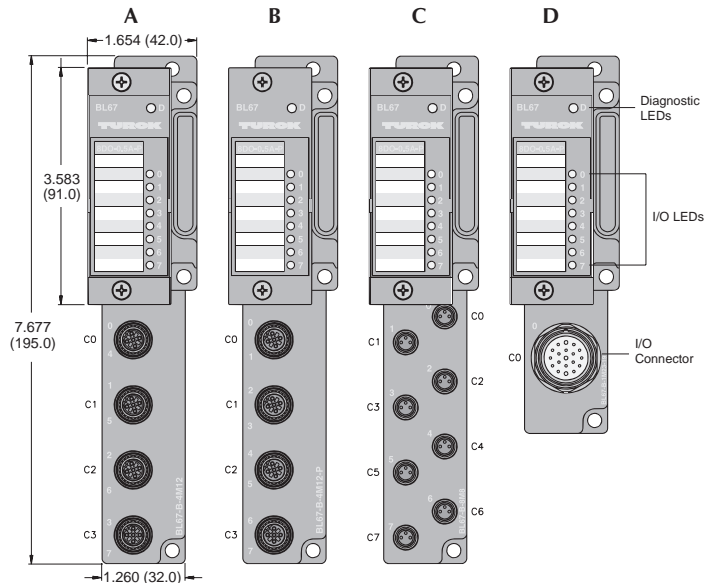
Mating cordset: RK 4.4T-\*RS 4.4T  
Splitter: VBRS 4.4-2RK 4T-\*/\*



Mating cordset: PSG 3M-\*



- M23-8O**
- 1 = Output<sub>0</sub>
  - 2 = Output<sub>1</sub>
  - 3 = Output<sub>2</sub>
  - 4 = Output<sub>3</sub>
  - 5 = Output<sub>4</sub>
  - 6 = Output<sub>5</sub>
  - 7 = Output<sub>6</sub>
  - 8 = Output<sub>7</sub>
  - 9 =  $V_+$
  - 10 =  $V_+$
  - 11 =  $V_+$
  - 12 =  $V_-$



### I/O Data Map 1

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
<b>Out</b>	n-1	(Data for modules to the left)							
	n	0-7	0-6	0-5	0-4	0-3	0-2	0-1	0-0
	n+1	(Data for modules to the right)							

Part Number	Drawing	Output Count	Connectors	Pinout	Outputs				Data
					Outputs per Connector	Current	Style	Individual Diagnostics	I/O Map
BL67-8DO-0.5A-P with BL67-B-4M12*	A	8	0-3	2G	2	0.5 A	Source		1
BL67-8DO-0.5A-P with BL67-B-4M12-P*	B	8	0-3	2G	2	0.5 A	Source		1
BL67-8DO-0.5A-P with BL67-B-8MB*	C	8	0-7	PO	1	0.5 A	Source		1
BL67-8DO-0.5A-P with BL67-B-1M23	D	8	0	M23-4O	4	0.5 A	Source		1

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



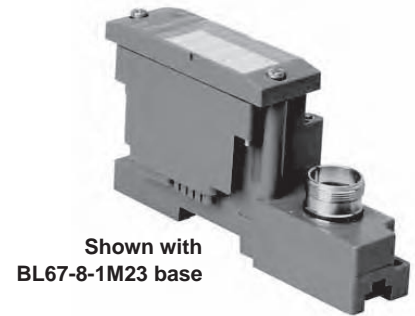
## 16 Discrete Output Modules BL67-16DO-0.1A-P

- Electrical:**
- Operating Current: <30 mA from  $V_{MB}$   
<100 mA from  $V_O$
  - Output Current: <0.5 A per output from  $V_O$

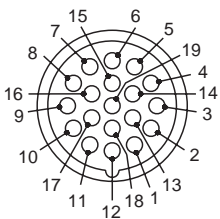
- Power Distribution:**
- Inputs:  $V_O$
  - Logic:  $V_{MB}$  and  $V_O$

- Material:**
- Connectors: Nickel-plated brass
  - Housing: PC-VO (Lexan)

- Diagnostics (Logical):**
- Diagnostic information available through the fieldbus gateway
- Diagnostics (Physical):**
- LED to indicate module bus communication status as well as I/O diagnostics
  - LEDs for each I/O point to indicate on/off status

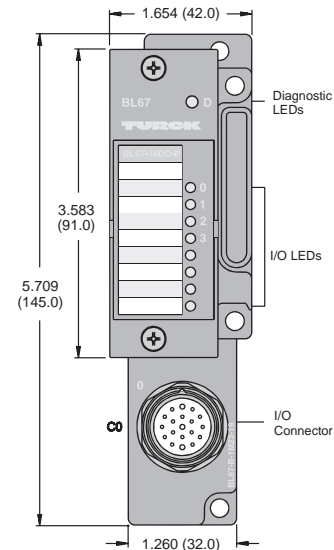


### Outputs Connectors



#### M23-16O

- |                           |                           |
|---------------------------|---------------------------|
| 1 = Output <sub>14</sub>  | 11 = Output <sub>12</sub> |
| 2 = Output <sub>10</sub>  | 12 = PE                   |
| 3 = Output <sub>6</sub>   | 13 = Output <sub>11</sub> |
| 4 = Output <sub>3</sub>   | 14 = Output <sub>7</sub>  |
| 5 = Output <sub>2</sub>   | 15 = Output <sub>0</sub>  |
| 6 = V-                    | 16 = Output <sub>4</sub>  |
| 7 = Output <sub>1</sub>   | 17 = Output <sub>8</sub>  |
| 8 = Output <sub>5</sub>   | 18 = Output <sub>15</sub> |
| 9 = Output <sub>9</sub>   | 19 = V <sub>1+</sub>      |
| 10 = Output <sub>13</sub> |                           |



### Application:

- SMC Valve Blocks; CSM DB25 19-17-\*/SMC
- MAC Valve Blocks; CSM DBK 25 19-17-\*/MAC
- 16MB12-4P2-CS191; CSM CKM 19-19-0-\*/S101

\* Indicates length in meters.

1 Splitter box, refer to Connectivity Catalog for more information

**Note:** TURCK cannot guarantee pinout of connecting devices. Please verify pinout is correct for your application.

### I/O Data Map 1

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Out	n-1	(Data for modules to the left)							
	n	0-7	0-6	0-5	0-4	0-3	0-2	0-1	0-0
	n+1	0-15	0-14	0-13	0-12	0-11	0-10	0-9	0-8
	n+2	(Data for modules to the right)							

Part Number	Outputs								Data I/O Map
	Drawing	Output Count	Connectors	Pinout	Outputs per Connector	Current	Style	Individual Diagnostics	
BL67-16DO-0.1-P with BL67-B-1M23-19	A	16	0	M23-16O	16	0.1 A	Source		1



# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## Deluxe 4 Discrete Input Modules

BL67-4DI-PD



Shown with BL67-B-4M8 base

**Electrical:** • Operating Current: <math><30\text{ mA}</math> from  $V_{MB}$   
 <math><100\text{ mA}</math> from  $V_I$

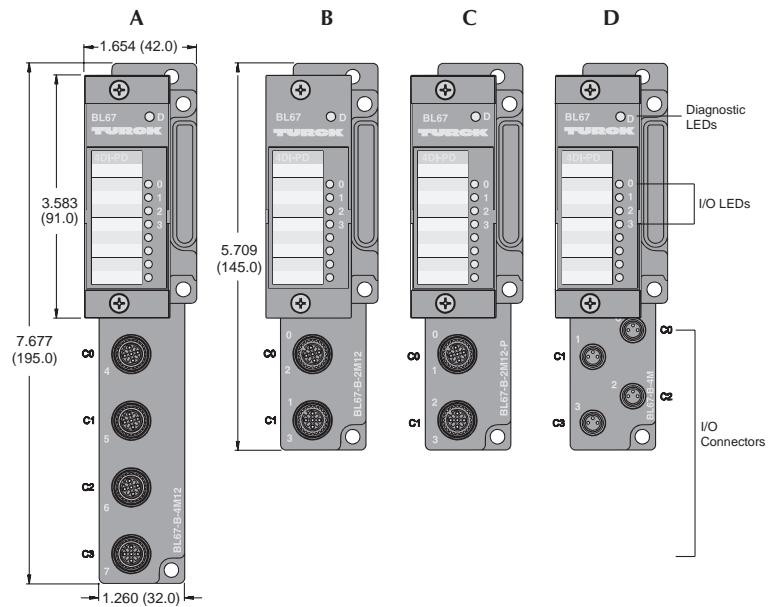
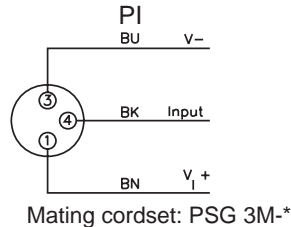
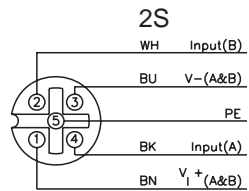
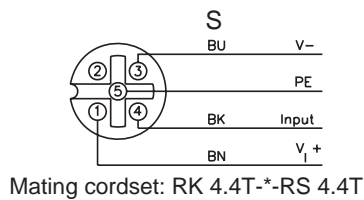
**Power Distribution:** • Inputs:  $V_I$   
 • Logic:  $V_{MB}$  and  $V_I$

**Material:** • Connectors: Nickel-plated brass  
 • Housing: PC-VO (Lexan)

**Diagnostics (Logical):**  
 • Diagnostic information available through the fieldbus gateway

**Diagnostics (Physical):**  
 • LED to indicate module bus communication status as well as I/O diagnostics  
 • LEDs for each I/O point to indicate on/off status

### Input Connectors



### I/O Data Map 1

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
In	n-1	(Data for modules to the left)							
	n	Data for next discrete modules			I-3	I-2	I-1	I-0	
	n+1	(Data for modules to the right)							

**Note:** I/O faults can be reported in the I/O map. Consult the product user manual for details.

Part Number	Inputs								
	Drawing	Input Count	Connectors	Pinout	Inputs per Connector	Sensor Style	Individual Diagnostics	Wire-Break Detection	Data I/O Map
BL67-4DI-PD with BL67-B-4M12*	A	4	0-3	S	1	PNP	X	X	1
BL67-4DI-PD with BL67-B-2M12*	B	4	0-1	2S	2	PNP	X		1
BL67-4DI-PD with BL67-B-2M12-P*	C	4	0-1	2S	2	PNP	X		1
BL67-4DI-PD with BL67-B-4M8*	D	4	0-3	PI	1	PNP	X		1

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## Deluxe 8 Discrete Input Modules

BL67-8DI-PD

**Electrical:** • Operating Current: <math><30\text{ mA}</math> from  $V_{MB}$   
 <math><100\text{ mA}</math> from  $V_I$

**Power Distribution:** • Inputs:  $V_I$   
 • Logic:  $V_{MB}$  and  $V_I$

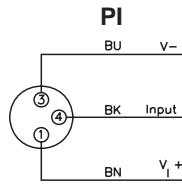
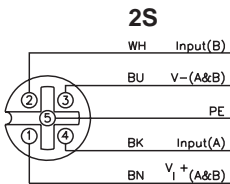
**Material:** • Connectors: Nickel-plated brass  
 • Housing: PC-VO (Lexan)

**Diagnostics (Logical):**  
 • Diagnostic information available through the fieldbus gateway

**Diagnostics (Physical):**  
 • LED to indicate module bus communication status as well as I/O diagnostics  
 • LEDs for each I/O point to indicate on/off status

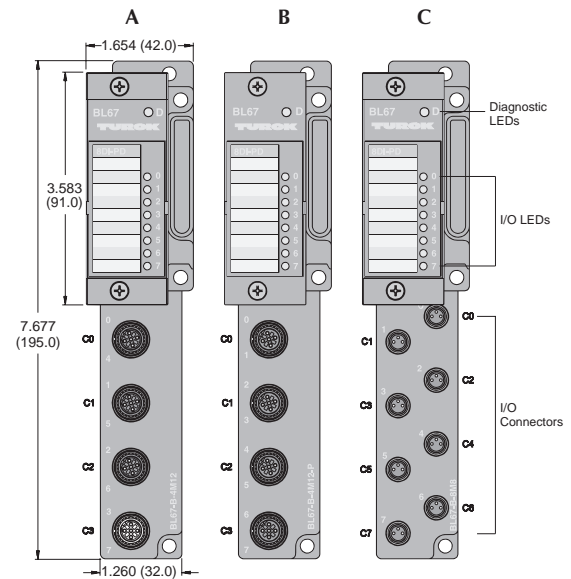


### Input Connectors



Mating cordset: RK 4.4T-\*RS 4.4T  
 Splitter: VBRS 4.4-2RK 4T-\*/\*

Mating cordset: PSG 3M-\*



### I/O Data Map 1

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
In	n-1	(Data for modules to the left)							
	n	I-7	I-6	I-5	I-4	I-3	I-2	I-1	I-0
	n+1	(Data for modules to the right)							

**Note:** I/O faults can be reported in the I/O map. Consult the product user manual for details.

Part Number	Inputs								Data
	Drawing	Input Count	Connectors	Pinout	Inputs per Connector	Sensor Style	Individual Diagnostics	Wire-Break Detection	I/O Map
BL67-8DI-PD with BL67-B-4M12*	A	8	0-3	2S	2	PNP	X	X	1
BL67-8DI-PD with BL67-B-4M12-P*	B	8	0-3	2S	2	PNP	X		1
BL67-8DI-PD with BL67-B-8M8*	C	8	0-7	PI	1	PNP	X		1

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## Discrete Input/Output Module

BL67-8XSG-P  
BL67-8XSG-PD

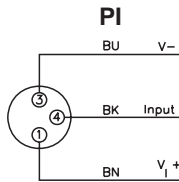
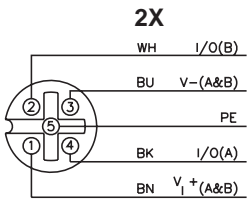


Shown with BL67-B-4M12 base

- Electrical:**
- Operating Current: <math><30\text{ mA}</math> from  $V_{MB}$   
<math><100\text{ mA}</math> from  $V_O$
  - Output Current: <math><0.5\text{ A}</math> per output from  $V_O$
- Power Distribution:**
- Inputs:  $V_O$
  - Logic:  $V_{MB}$  and  $V_O$
- Material:**
- Connectors: Nickel-plated brass
  - Housing: PC-VO (Lexan)

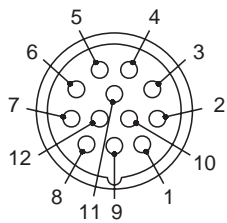
- Diagnostics (Logical):**
- Diagnostic information available through the fieldbus gateway
- Diagnostics (Physical):**
- LED to indicate module bus communication status as well as I/O diagnostics
  - LEDs for each I/O point to indicate on/off status

### Input/Output Connectors

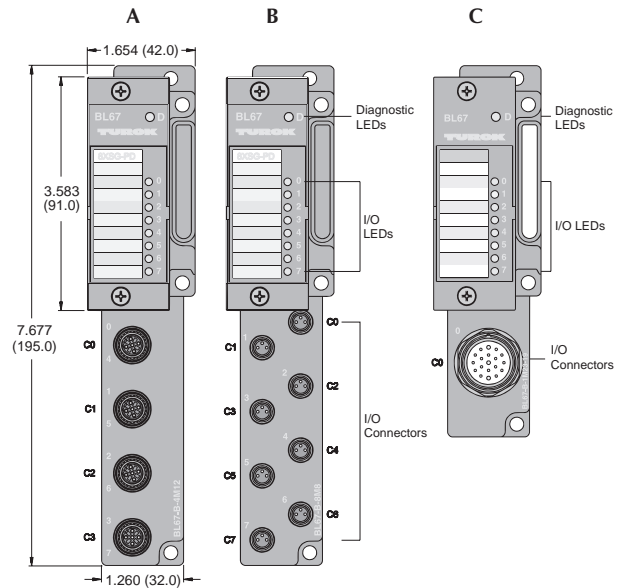


Mating cordset: RK 4.4T-\*RS 4.4T  
Splitter: VBRS 4.4-2RK 4T-\*/\*

Mating cordset: PSG 3M-\*



- M23**
- 1 = Output<sub>0</sub>
  - 2 = Output<sub>1</sub>
  - 3 = Output<sub>2</sub>
  - 4 = Output<sub>3</sub>
  - 5 = Output<sub>4</sub>
  - 6 = Output<sub>5</sub>
  - 7 = Output<sub>6</sub>
  - 8 = Output<sub>7</sub>
  - 9 = V<sub>1+</sub>
  - 10 = V<sub>1+</sub>
  - 11 = V<sub>1+</sub>
  - 12 = V<sub>-</sub>



### I/O Data Map 1

In	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
	n-1	(Data for modules to the left)							
	n	I-7	I-6	I-5	I-4	I-3	I-2	I-1	I-0
	n+1	(Data for modules to the right)							

### I/O Data Map 2

Out	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
	n-1	(Data for modules to the left)							
	n	O-7	O-6	O-5	O-4	O-3	O-2	O-1	O-0
	n+1	(Data for modules to the right)							

**Note:** I/O faults can be reported in the I/O map. Consult the product user manual for details.

Part Number	Inputs										Outputs					Data I/O Map	
	Drawing	Input Count	Connectors	Pinout	Inputs per Connector	Sensor Style	V+ Avail. Current	Individual Diagnostics	Wire-Break Detection	Output Count	Connectors	Pinout	Outputs per Connector	Current	Individual Diagnostics		Wire-Break Detection
BL67-8XSG-PD with BL67-B-4M12*	A	8	0-3	2X	2	PNP		X		8	0-3	2X	2	0.5 A	X		1
BL67-8XSG-PD with BL67-B-8M8*	B	8	0-7	PI	1	PNP		X		8	0-7	PO	1	0.5 A	X		1
BL67-8XSG-PD with BL67-B-1M23	C	8	0	M23	8	PNP	80 mA each			8	0	M23	8	0.5 A	X		1
BL67-8XSG-PD with BL67-B-1M23-VI*	C	8	0	M23	8	PNP	4A total			8	0	M23	8	0.5 A	X		1

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles

## Deluxe 4 Discrete Input 4 Discrete Output Module

BL67-4DI4DO-PD



Shown with  
BL67-B-4M12 base



- Electrical:**
- Operating Current: <math><30\text{ mA}</math> from  $V_{MB}$   
<math><100\text{ mA}</math> from  $V_O$
  - Output Current: <math><0.5\text{ A}</math> per output from  $V_O$

- Power Distribution:**
- Inputs:  $V_O$
  - Logic:  $V_{MB}$  and  $V_O$

- Material:**
- Connectors: Nickel-plated brass
  - Housing: PC-VO (Lexan)

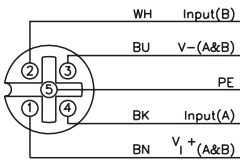
**Diagnostics (Logical):** Diagnostic information available through the fieldbus gateway

**Diagnostics (Physical):**

- LED to indicate module bus communication status as well as I/O diagnostics
- LEDs for each I/O point to indicate on/off status

### Input/Output Connectors

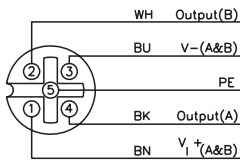
**2S**



**Mating cordset:**  
RK 4.4T-\*RS 4.4T

**Splitter:** VBRS 4.4-2RK 4T-\*/\*

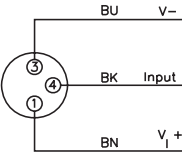
**2G**



**Mating cordset:**  
RK 4.4T-\*RS 4.4T

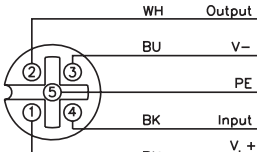
**Splitter:** VBRS 4.4-2RK 4T-\*/\*

**PI**



**Mating cordset:** PSG 3M-\*

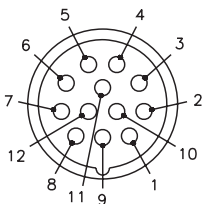
**C**



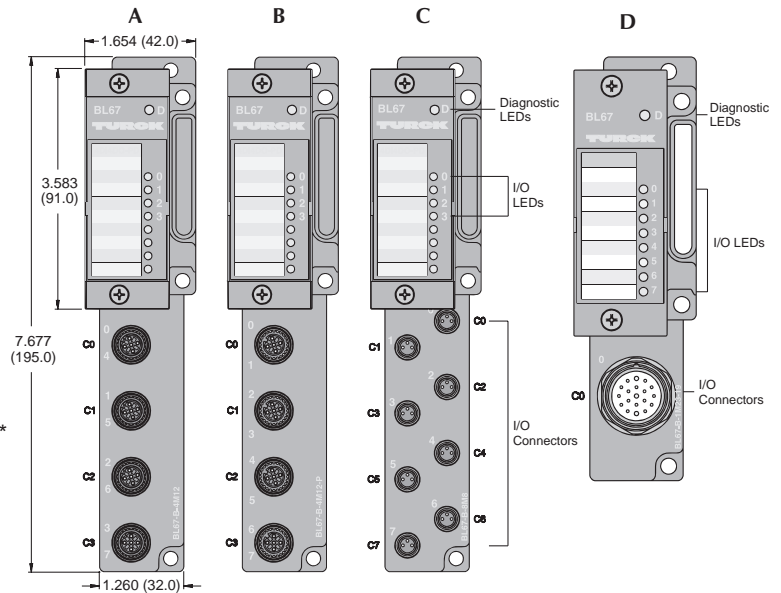
**Mating cordset:**  
RK 4.4T-\*RS 4.4T

**Splitter:**  
VB2-RS 4.4T-1/2RK 4.4T-\*/\*/S651

**M23**



- 1 = Input<sub>0</sub>
- 2 = Input<sub>1</sub>
- 3 = Input<sub>2</sub>
- 4 = Input<sub>3</sub>
- 5 = Output<sub>0</sub>
- 6 = Output<sub>1</sub>
- 7 = Output<sub>2</sub>
- 8 = Output<sub>3</sub>
- 9 = V<sub>I+</sub>
- 10 = V<sub>I+</sub>
- 11 = V<sub>I+</sub>
- 12 = V<sub>-</sub>



### I/O Data Map 1

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
<b>In</b>	n-1	(Data for modules to the left)							
	n	Data for next discrete modules				I-3	I-2	I-1	I-0
	n+1	(Data for modules to the right)							
<b>Out</b>	n-1	(Data for modules to the left)							
	n	Data for next discrete modules				O-3	O-2	O-1	O-0
	n+1	(Data for modules to the right)							

**Note:** I/O faults can be reported in the I/O map. Consult the product user manual for details.

Part Number	Inputs										Outputs					Data I/O Map		
	Drawing	Input Count	Connectors	Pinout	Inputs per Connector	Sensor Style	V+ Avail. Current	Group Diagnostics	Individual	Wire-Break Detection	Output Count	Connectors	Pinout	Outputs per Connector	Current		Individual Diagnostics	Wire-Break Detection
BL67-4DI4DO-PDwith BL67-B-4M12-P*	A	4	0-1	2S	2	PNP			X		4	2-3	2G	2	0.5 A	X		1
BL67-4DI4DO-PD with BL67-B-4M12*	B	4	0-3	C	1	PNP			X		4	0-3	C	1	0.5 A	X		1
BL67-4DI4DO-PD with BL67-B-8M8*	C	4	0-3	PI	1	PNP			X		4	4-7	PO	1	0.5 A	X		1
BL67-4DI4DO-PD with BL67-B-1M23*	D	4	0	M23	4	PNP	80 mA each				4	0	M23	4	0.5 A			1
BL67-4DI4DO-PD with BL67-B-1M23*	D	4	0	M23	4	PNP	4 a total				4	0	M23	4	0.5 A			

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## CANopen Interface Module

BL67-1CVI

**Electrical:**

- Operating Current: <30 mA from  $V_{MB}$  (SSI)
- <50 mA from V (all)
- <100 mA from V supply

**Power Distribution:**

- Inputs:  $V_I$
- Logic:  $V_{MB}$  and V

**Material:**

- Connectors: Nickel-plated brass
- Housing: PC-VO (Lexan)

**Diagnostics (Logical):** • Diagnostic information available through the fieldbus gateway

**Diagnostics (Physical):**

- LED to indicate module bus communication status as well as I/O diagnostics
- LEDs for each I/O point to indicate on/off status

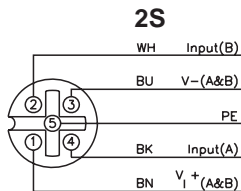
**Functional Description:**

- Connect up to 8 CANopen slaves to this module
- Map the slaves into any available fieldbus

Shown with BL67-B-4M12 base

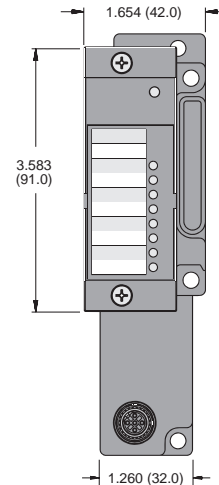


### Input Connectors



Mating cordset: RK 4.4T-\*RS 4.4T

Splitter: VBRS 4.4-2RK 4T-\*/\*



I/O Data Map 1

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
In	1		Slave 2				Slave 1		
	2		Slave 4				Slave 3		
	3		Slave 6				Slave 5		
Out	4		Slave 7				Slave 8		
	5		Slave 2				Slave 1		
	6		Slave 4				Slave 3		
	7		Slave 6				Slave 5		
	8		Slave 7				Slave 8		

Part Number	Inputs							Data
	Drawing	Slaves	Connectors	Pinout	Bytes/Slaves	Max. Baud Rate	Group Diagnostics	I/O Map
BL67-1CVI with BL67-B-1M12	A	8	0	2S	1	X	X	1

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles

## Serial Communication Modules

BL67-1RS485/422

BL67-1RS232

BL67-1SSI



**Electrical:**

- Operating Current: <140 mA from  $V_{MB}$  (RS232)
- <60 mA from  $V_{MB}$  (RS485/422)
- <50 mA from  $V_{MB}$  (SSI)
- <50 mA from  $V$  (all)

**Power Distribution:**

- Inputs:  $V$
- Logic:  $V_{MB}$  and  $V$

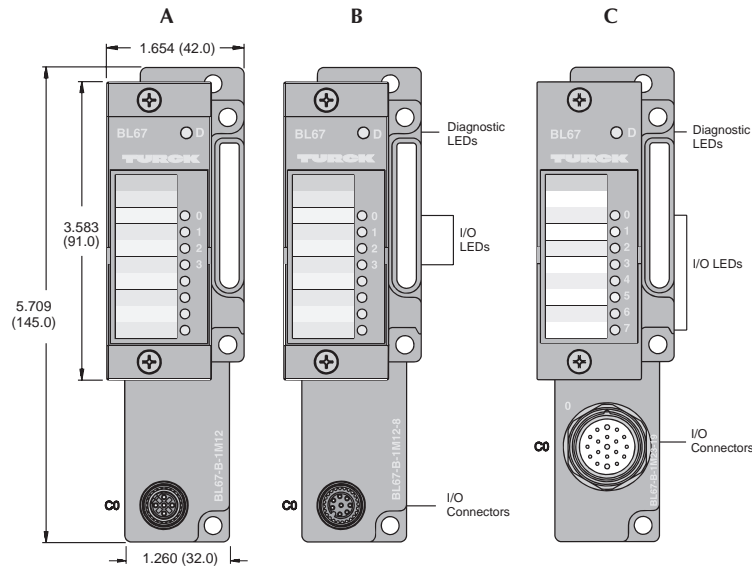
**Material:**

- Connectors: Nickel-plated brass
- Housing: PC-VO (Lexan)

**Diagnostics (Logical):** Diagnostic information available through the fieldbus gateway

**Diagnostics (Physical):**

- LED to indicate module bus communication status as well as I/O diagnostics
- LEDs for each I/O point to indicate on/off status



Part Number	Inputs							Outputs				Data
	Drawing	Input Count	Connectors	Pinout	Inputs per Connector	Sensor Style	Groups Diagnostics	Output Count	Connectors	Pinout	Outputs per Connectors	I/O Map
BL67-1RS485/422 with BL67-B-1M12*	A	1	0	B4	1	RS 485/422	X	0	B4	1	1	1
BL67-1RS485/422 with BL67-B-1M12-8*	B	1	0	B4-8	1	RS 485/422	X	0	B4-8	1	1	1
BL67-1RS232 with BL67-B-1M12*	A	1	0	B2	1	RS 232	X	0	B2	1	1	1
BL67-1RS232 with BL67-B-1M12-8*	B	1	0	B2-8	1	RS 232	X	0	B2-8	1	1	1
BL67-1SSI with BL67-B-1M23*	C	1	0	SSI-23	1	SSI	X	0	SSI-23	1	2	2
BL67-1SSI with BL67-B-1M12-8*	B	1	0	SSI	1	SSI	X	0	SSI	1	2	2



# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## Serial Communication Modules

BL67-1RS485/422

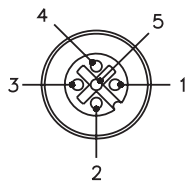
BL67-1RS232

BL67-1SSI

### Input/Output Connectors

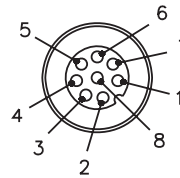
Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
n-1	(Data from modules to the left)							
n	Data Byte 5 (MSB)							
n+1	Data Byte 4							
n+2	Data Byte 3							
n+3	Data Byte 2							
n+4	Data Byte 1							
n+5	Data Byte 0 (LSB)							
n+6	Buf Ovfl	Frame Err	HndSh Err	HW Failure	Prm Err	Reserved		
n+7	STAT	TX_CNT_ ACK	RX_CNT			RX_BYTE_ CNT		
n+8	(Data from modules to the right)							
n-1	(Data from modules to the left)							
n	Data Bytes 5 (MSB)							
n+1	Data Bytes 4							
n+2	Data Bytes 3							
n+3	Data Bytes 2							
n+4	Data Bytes 1							
n+5	Data Bytes 0 (LSB)							
n+6	Reserved						RxBuf Flush	TxBuf Flush
n+7	STAT Res	RX_CNT_ ACK		TX_ CNT		TX_BYTE_ CNT		
n+8	(Data from modules to the right)							

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
n-1	(Data from modules to the left)							
n	STOP	X	X	ERR PARA	UFLW	OFLW	ERR SSI	SSI DIAG
n+1	UP	DN	REL CMP2	FLAG CMP2	STS CMP2	REL CMP1	FLAG CMP1	STS CMP1
n+2	REG WR ACPT	REG WR ACK	X	X	SSI STS3	SSI STS2	SSI STS1	SSI STS0
n+3	REG RD ABRT	X	REG_RD_ADR					
n+4	REG_RD_DATA, Byte 0							
n+5	REG_RD_DATA, Byte 1							
n+6	REG_RD_DATA, Byte 2							
n+7	REG_RD_DATA, Byte 3							
n+8	(Data from modules to the right)							
n-1	(Data from modules to the left)							
n	STOP	X	X	X	X	X	X	X
n+1	X	X	X	CLR CMP2	EN CMP2	X	CLR CMP1	EN CMP1
n+2	REG WR	X	REG_WR_ADR					
n+3	X	X	REG_WR_ADR					
n+4	REG_WR_DATA, Byte 0							
n+5	REG_WR_DATA, Byte 1							
n+6	REG_WR_DATA, Byte 2							
n+7	REG_WR_DATA, Byte 3							
n+8	(Data from modules to the right)							



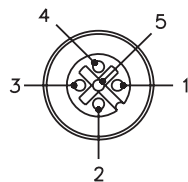
#### B2

- 1 = NC
- 2 = TxD
- 3 = Gnd<sub>ISO</sub>
- 4 = RxD
- 5 = Shield



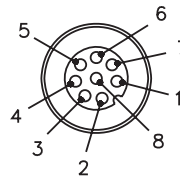
#### B2-8

- 1 = RxD
- 2 = TxD
- 3 = RTS
- 4 = CTS
- 5 = Gnd<sub>ISO</sub>
- 6 = NC
- 7 = NC
- 8 = Shield



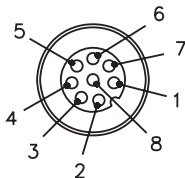
#### B4

- 1 = Tx
- 2 = Tx+
- 3 = Rx-
- 4 = Rx+
- 5 = Shield



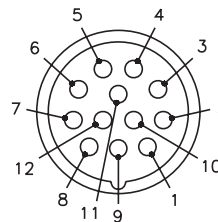
#### B4-8

- 1 = Rx+
- 2 = Tx+
- 3 = Tx-
- 4 = NC
- 5 = Rx-
- 6 = Gnd<sub>ISO</sub>
- 7 = NC
- 8 = Shield



#### SSI

- 1 = V-
- 2 = V<sub>I</sub>+
- 3 = CLK+
- 4 = CLK-
- 5 = DATA+
- 6 = DATA-
- 7 = NC
- 8 = Shield



#### SSI-23

- 1 = V-
- 2 = V<sub>I</sub>+
- 3 = CLK+
- 4 = CLK-
- 5 = DATA+
- 6 = DATA-
- 7 = NC
- 8 = Shield
- 9 = NC
- 10 = NC
- 11 = NC
- 12 = NC

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## 2 Analog Input Modules

BL67-2AI-V  
BL67-2AI-I  
BL67-4AI-V/I



**Electrical:** • Operating Current: <math><35\text{ mA}</math> from  $V_{MB}$   
<math><12\text{ mA}</math> from  $V$

**Power Distribution:** • Inputs:  $V_I$   
• Logic:  $V_{MB}$  and  $V_I$

**Material:** • Connectors: Nickel-plated brass  
• Housing: PC-VO (Lexan)

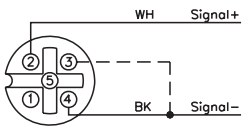
**Diagnostics (Logical):**

• Diagnostic information available through the fieldbus gateway

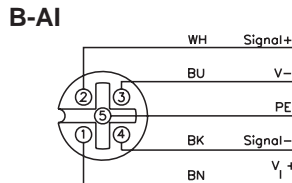
**Diagnostics (Physical):**

• LED to indicate module bus communication status as well as I/O diagnostics  
• LEDs for each I/O point to indicate on/off status

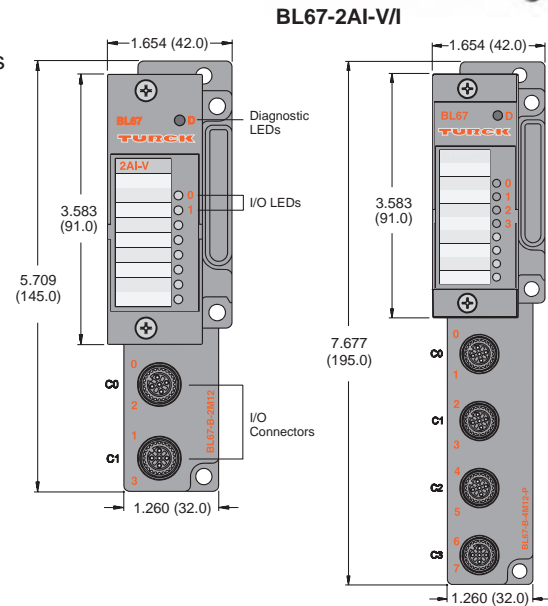
### Input Connectors



Loop Powered (Isolated)



DeviceNet Powered Transducer



I/O Data Map 1

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
<b>In</b>	n-1	(Data from modules to the left)							
	n	Channel 0, LSB							
	n+1	Channel 0, MSB							
	n+2	Channel 1, LSB							
	n+3	Channel 1, MSB							
	n+4	Channel 2, MSB							
	n+5	Channel 2, MSB							
	n+6	Channel 3, MSB							
	n+7	Channel 3, MSB							
n+8	(Data from modules to the right)								

Part Number	Inputs								Data
	Input Count	Connectors	Pinout	Inputs per Connector	Sensor Style	Group Diagnostics	Individual Diagnostics	Wire-Break Detection	I/O Map
BL67-2AI-V with BL67-B-2M12*	2	0-1	B-AI	1	-10/0 to 10 V				1
BL67-2AI-I with BL67-B-2M12*	2	0-1	B-AI	1	0/4 to 20 mA				1
BL67-4AI-V/I with BL67-B-4M12*	4	0-3	B-AI	1	-10/0 to 10 V, 0/4 to 20 mA				2



# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## 2 Temperature Input Module

BL67-2AI-TC  
BL67-2AI-PT



**Electrical:**

- Operating Current: <35 mA from  $V_{MB}$  (TC)
- <45 mA from  $V_{MB}$  (PT)
- <30 mA from V (all)

**Power Distribution:**

- Inputs:  $V_I$
- Logic:  $V_{MB}$  and  $V_I$
- Thermocouples Types: B, E, J, K, N, R, S AND T (TC)
- RTD Types: PT100, PT200, PT500, PT1000, Ni100, Ni1000 (PT)

**Material:**

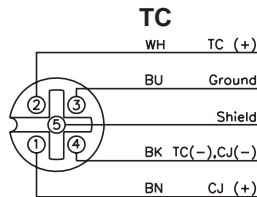
- Connectors: Nickel-plated brass
- Housing: PC-V0 (Lexan)

**Diagnostics (Logical):** Diagnostic information available through the fieldbus gateway

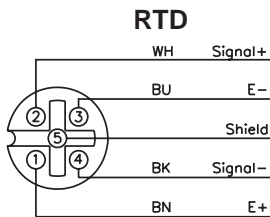
**Diagnostics (Physical):**

- LED to indicate module bus communication status as well as I/O diagnostics
- LEDs for each I/O point to indicate on/off status

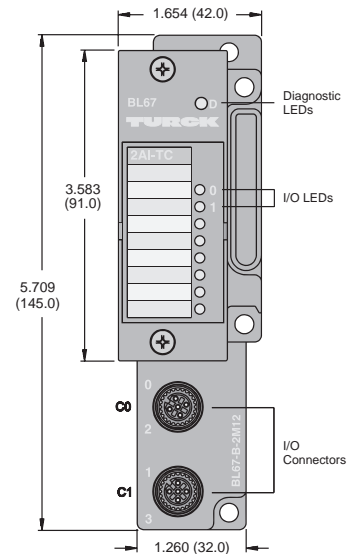
### Input Connectors



**Mating Connector** (field wireable): WAS5-THERMO  
(includes cold junction compensation)  
Isolated Loop: RK 4.5T-\*M-RS 4.5T/S653  
Loop Powered: RK 4.5T-\*M-RS 4.5T/LPS/S653



**Mating cordset:** RK 4.5T-\*RS 4.5T  
Isolated Loop: RK 4.5T-\*M-RS 4.5T/S653  
Loop Powered: RK 4.5T-\*M-RS 4.5T/LPS/S653



### I/O Data Map 1

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
<b>In</b>	n-1	(Data from modules to the left)							
	n	Channel 0, LSB							
	n+1	Channel 0, MSB							
	n+2	Channel 1, LSB							
	n+3	Channel 1, MSB							
	n+4	(Data from modules to the right)							

Part Number	Inputs							Wire-Break Detection	Data I/O Map
	Input Count	Connectors	Pinout	Inputs per Connector	Sensor Style	Group Diagnostics	Individual Diagnostics		
BL67-2AI-TC with BL67-B-2M12*	2	0-1	TC	1	TC				1
BL67-2AI-PT with BL67-B-2M12*	2	0-1	RTD	1	RTD				1



# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## 2 Analog Output Modules

BL67-2AO-V  
BL67-2AO-I



**Electrical:**

- Operating Current: <60 mA from  $V_{MB}$  (V)
- <40 mA from  $V_{MB}$  (I)
- <50 mA from  $V_I$  (all)

**Power Distribution:**

- Inputs:  $V_I$
- Logic:  $V_{MB}$  and  $V_I$

**Material:**

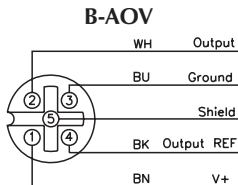
- Connectors: Nickel-plated brass
- Housing: PC-V0 (Lexan)

**Diagnostics (Logical):** • Diagnostic information available through the fieldbus gateway

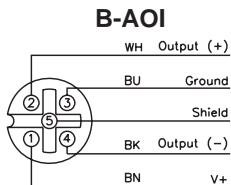
**Diagnostics (Physical):**

- LED to indicate module bus communication status as well as I/O diagnostics
- LEDs for each I/O point to indicate on/off status

### Input Connectors

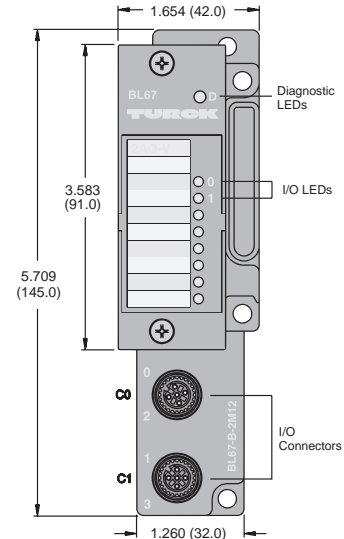


**Mating cordset:**  
RK 4.5T\*-RS 4.5T



DeviceNet Powered Transducer

**Mating cordset:**  
RK 4.5T\*-RS 4.5T



I/O Data Map 1

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Out	n-1	(Data from modules to the left)							
	n	Channel 0, LSB							
	n+1	Channel 0, MSB							
	n+2	Channel 1, LSB							
	n+3	Channel 1, MSB							
	n+4	(Data from modules to the right)							

Part Number	Outputs							Data
	Output Count	Connectors	Pinout	Outputs per Connector	Type	Individual Diagnostics	Wire-Break Detection	I/O Map
BL67-2AO-V with BL67-B-2M12*	2	0-1	B-AOV	1	-10/0 to 10V			1
BL67-2AO-I with BL67-B-2M12*	2	0-1	B-AOI	1	0/4 to 20 mA			1

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles



## Power Feeding Module

BL67-PF-24VDC



**Electrical:** • Operating Current: <math><30\text{ mA}</math> from  $V_{MB}$

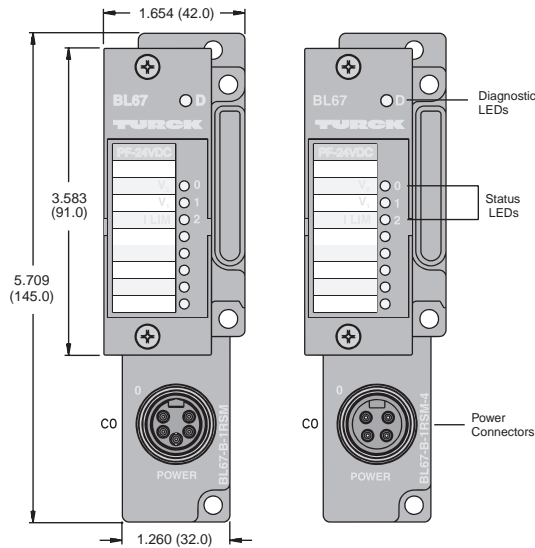
- Output Current: <math><10\text{ A}</math> for downstream I/O

**Power Distribution:** • Accepts 24 VDC supply to provide  $V_1$  and  $V_0$  for downstream modules

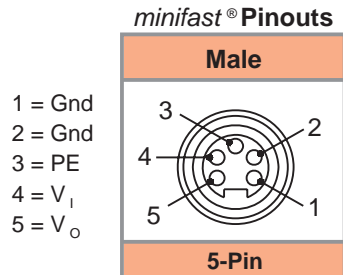
**Material:** • Connectors: Nickel-plated brass  
• Housing: PC-V0 (Lexan)

**Diagnostics (Logical):** • Diagnostic information available through the fieldbus gateway

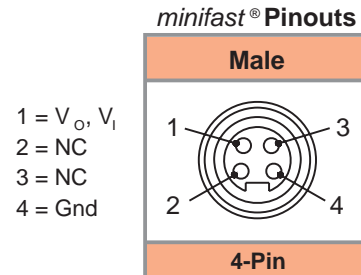
**Diagnostics (Physical):** • LED to indicate module bus communication status as well as I/O diagnostics  
• LEDs for each I/O point to indicate on/off status



### Pinouts



When used with BL67-B-1RSM base module.



When used with BL67-B-1RSM-4 base module.

# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles

## Base Modules for BL67 I/O

### Two *euromast*<sup>®</sup> Connectors BL67-B-2M12



Base module with two euromast connectors.  
When used with 4 input or 4 output modules each connector has 2 I/O points.

### Two *euromast*<sup>®</sup> Connectors with Paired I/O BL67-B-2M12-P



Base module with two euromast connectors.  
Each connector has 2 I/O points, paired so consecutive points are on the same connector.

### Four *euromast*<sup>®</sup> Connectors BL67-B-4M12



Base module with four euromast connectors.  
When used with 8 input or 8 output modules each connector has 2 I/O points.

### Four *euromast*<sup>®</sup> Connectors with Paired I/O BL67-B-4M12-P



Base module with four euromast connectors.  
Each connector has 2 I/O points, paired so consecutive points are on the same connector.

### One *euromast*<sup>®</sup> Connector (5-pin) BL67-B-1M12



Base module with one euromast 5-pin connector.  
Typically used with serial I/O modules.

### One *euromast*<sup>®</sup> Connector (8-pin) BL67-B-1M12-8



Base module with one euromast 8-pin connector.  
Typically used with serial I/O modules.

### Four *picofast*<sup>®</sup> Connectors BL67-B-4M8



Base module with four picofast connectors.  
Typically used with 4-input or 4-output modules.

### Eight *picofast*<sup>®</sup> Connectors BL67-B-8M8



Base module with eight picofast connectors.  
Typically used with 8-input or 8-output modules.



# TURCK Modular Industrial I/O System BL 67

Modular I/O • Fieldbus Independent Configuration • IP 67 Protection • Various I/O Styles

## Base Modules for BL67 I/O

### One M23 Connector (12-pin) BL67-B-1M23



Base module with one 12-pin M23 connector. Typically used with 8-output or SSI modules.

### BL67-B-1M23-VI



Base module that allows full 4 A available from V+ pins.

### One M23 Connector (19-pin) BL67-B-1M23-19



Base module with one 19-pin M23 connector. For use with the 16-output module.

### One minifast® Connector (5-pin) BL67-B-1RSM



Base module with one 5-pin minifast connector. For use with the power feeding module, five wire power scheme.

### One minifast® Connector (4-pin) BL67-B-1RSM-4



Base module with one 4-pin minifast connector. For use with the power feeding module, four wire power scheme.

### Labels for labeling electronic modules BL67-Label/DIN-A4-50-PCS

DIN A4 sheet size

### Programming Cable - For connecting the BL20/BL67 system to the I/O Assistant software XN-PS2-CABLE



# TURCK Products Warranty Terms and Conditions

## RISK OF LOSS

Delivery of the equipment to a common carrier shall constitute delivery to the Purchaser and the risk of loss shall transfer at that time to Purchaser. Should delivery be delayed due to an act or omission on the part of the Purchaser, risk of loss shall transfer to the Purchaser upon notification by TURCK Inc. that the order is complete and ready for shipment.

## WARRANTIES

TURCK INC. (hereinafter "TURCK") offers five (5) WARRANTIES to cover all products sold. They are as follows:

- 1) The **12-MONTH WARRANTY** is available for the products listed - generally those not covered by LIFETIME, 5-YEAR, 24-MONTH or 18-MONTH warranty. No registration required.
- 2) The **18-MONTH WARRANTY** is available for the products listed - generally those not covered by LIFETIME or 5-YEAR WARRANTY. No registration is required.
- 3) The **24-MONTH WARRANTY** is available for the products listed - generally those not covered by LIFETIME, 5-YEAR or 18-MONTH. No registration is required.
- 4) The **5-YEAR WARRANTY** is available generally for the products listed. No registration is required.
- 5) A **LIFETIME WARRANTY** is available for the products listed. It becomes effective when the accompanying TURCK LIFETIME WARRANTY REGISTRATION is completed and returned to TURCK.

## GENERAL TERMS AND CONDITIONS FOR ALL WARRANTIES

- 12-MONTH STANDARD WARRANTY
- 18-MONTH STANDARD WARRANTY
- 24-MONTH STANDARD WARRANTY
- 5-YEAR WARRANTY
- LIFETIME WARRANTY

TURCK warrants the Products covered by the respective WARRANTY AGREEMENTS to be free from defects in material and workmanship under normal and proper usage for the respective time periods listed above from the date of shipment from TURCK. In addition, certain specific terms apply to the various WARRANTIES.

**THESE EXPRESS WARRANTIES ARE IN LIEU OF ANDEXCLUDE ALL OTHER REPRESENTATIONSMADE - BOTH EXPRESSEDANDIMPLIED. THERE ARE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE FOR PRODUCTS COVERED BY THESE TERMS AND CONDITIONS.**

TURCK warrants that the goods sold are as described, but no promise, description, affirmation of fact, sample model or representation, oral or written shall be part of an order, unless set forth in these terms and conditions, or are in writing and signed by an authorized representative of TURCK. These WARRANTIES do not apply to any Product which has been subject to misuse, negligence, or accident -or to any Product which has been modified or repaired, improperly installed, altered, or disassembled -except according to TURCK's written instructions.

These WARRANTIES are subject to the following conditions:

- 1) These WARRANTIES are limited to the electronic and mechanical performance only, as expressly detailed in the Product specifications and NOT to cosmetic performance.
- 2) These WARRANTIES shall not apply to any cables attached to, or integrated with the Product. However, the 18-MONTH WARRANTY shall apply to cables sold separately by TURCK.
- 3) These WARRANTIES shall not apply to any Products which are stored, or utilized, in harsh environmental or electrical conditions outside TURCK's written specifications.
- 4) The WARRANTIES are applicable only to Products shipped from TURCK subsequent to January 1, 1988.

## ADDITIONAL SPECIFIC TERMS FOR -

**(12-MONTH STANDARD WARRANTY) for Linear Displacement Transducers and RFID products.**

**(18-MONTH STANDARD WARRANTY) FOR ULTRASONIC SENSORS, CABLES AND ALL NON-SENSING PRODUCTS SOLD BY TURCK INC. INCLUDING MULTI-SAFE, MULTI-MODUL, MULTI-CART AND RELATED AMPLIFIER PRODUCTS, RELAYS AND TIMERS.**

**(24-MONTH STANDARD WARRANTY) FOR ENCODERS.**

**5-YEAR WARRANTY FOR INDUCTIVE AND CAPACITIVE PROXIMITY SENSORS: The periods covered for the above WARRANTIES and Products shall be 12 MONTHS, 18-MONTHS, 24-MONTHS and 5-YEARS, respectively, from the date of shipment from TURCK.**

## LIFETIME WARRANTY (OPTIONAL - REGISTRATION REQUIRED) FOR INDUCTIVE, INDUCTIVE MAGNET OPERATED AND CAPACITIVE PROXIMITY SENSORS SOLD TO THE ORIGINAL PURCHASER FOR THE LIFETIME OF THE ORIGINAL APPLICATION.

**The following terms apply to the LIFETIME WARRANTY in addition to the General Terms:**

- 1) This WARRANTY shall be effective only when the LIFETIME WARRANTY REGISTRATION has been completed, signed by the End User and an authorized TURCK Representative or Distributor and has been received by TURCK no later than six (6) months after installation in the End User's Plant, or two (2) years from the date product was shipped from TURCK, whichever is sooner.
- 2) This warranty is available only to TURCK's authorized Representatives, Distributors and to the Original User. (The term "Original User" means that person, firm, or corporation which first uses the Product on a continuous basis in connection with the operation of a production line, piece of machinery, equipment, or similar device.) In the event the ownership of the product is transferred to a person, firm or corporation other than the Original User, this WARRANTY shall terminate.
- 3) This WARRANTY is applicable only to the Original Application. In the event the machinery, equipment, or production line to which the Product is connected, or on which it is installed, is substituted, changed, moved or replaced, the WARRANTY shall terminate.
- 4) This WARRANTY shall be valid only if the Product was purchased by the Original User from TURCK, or from an authorized TURCK Distributor, or was an integral part of a piece of machinery and equipment obtained by the Original user from an Original Equipment Manufacturer, which itself, was purchased directly from TURCK or from an authorized Distributor.

## PURCHASER'S REMEDIES

This Remedy shall apply to all WARRANTIES. If a TURCK Distributor desires to make a WARRANTY Claim, the Distributor shall, if requested by TURCK, ship the Product to TURCK's factory in Minneapolis, Minnesota, postage or freight prepaid. If the User desires to make a WARRANTY Claim, they shall notify the authorized TURCK Distributor from whom it was purchased or, if such Distributor is unknown, shall notify TURCK. TURCK shall, at its option, take any of the following two courses of action for any products which TURCK determines are defective in materials or workmanship.

- 1) Repair or replace the Product and ship the Product to the Original Purchaser or to the authorized TURCK Distributor, postage or freight prepaid; or
- 2) Repay to the Original Purchaser that price paid by the Original Purchaser; provided that if the claim is made under the LIFETIME WARRANTY, and such Product is not then being manufactured by TURCK, then the amount to be repaid by TURCK to the Original Purchaser shall be reduced according to the following schedule:

Number of Years Since Date of Purchase by Original Purchaser	Percent of Original Purchase Price To Be Paid by TURCK
10	50%
15	25%
20	10%
More than 20	5%

**PURCHASER'S REMEDIES SHALL BE LIMITED EXCLUSIVELY TO THE RIGHT OF REPLACEMENT, REPAIR OR REPAYMENT AS PROVIDED AND DOES NOT INCLUDE ANY LABOR COST OR REPLACEMENT AT ORIGINAL PURCHASER'S SITE. TURCK SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF ANY WARRANTY, EXPRESSED OR IMPLIED, APPLICABLE TO THE PRODUCT, INCLUDING WITHOUT LIMITATION, ANY DAMAGES RESULTING FROM PROPERTY DAMAGE, PERSONAL INJURY OR BUSINESS INTERRUPTION.**

## CONSIDER SAFETY AND PROTECTION PRECAUTIONS

TURCK takes great care to design and build reliable and dependable products, however, some products can fail eventually. You must take precautions to design your equipment to prevent property damage and personal injury in the unlikely event of failure. As a matter of policy, TURCK does NOT recommend the installation of electronic controls as the sole device FOR THE PROTECTION OF PERSONNEL

in connection with power driven presses, brakes, shears and similar equipment and, therefore, the customer should build in redundancy or dual control using approved safety devices for these applications.

# STANDARD CAUTIONS

## PRE-INSTALLATION or SERVICE

1. Before servicing a valve or other pneumatic component, be sure that all sources of energy are turned off, the entire pneumatic system is shut off and exhausted, and all power sources are locked out (ref: OSHA 1910.147, EN 1037).
2. All ROSS products, including service kits and parts, should be installed and/or serviced only by persons having training and experience with pneumatic equipment. Because any installation can be tampered with or need servicing after installation, persons responsible for the safety of others or the care of equipment must check every installation on a regular basis and perform all necessary maintenance.
3. All applicable instructions should be read and complied with before using any fluid power system in order to prevent harm to persons or equipment. In addition, overhauled or serviced valves must be functionally tested prior to installation and use.
4. Each ROSS product should be used within its specification limits. In addition, use only ROSS parts to repair ROSS products. Failure to follow these directions can adversely affect the performance of the product or result in the potential for human injury or damage to property.

## FILTRATION and LUBRICATION

5. Dirt, scale, moisture, etc. are present in virtually every air system. Although some valves are more tolerant of these contaminants than others, best performance will be realized if a filter is installed to clean the air supply, thus preventing contaminants from interfering with the proper performance of the equipment. ROSS recommends a filter with a 5-micron rating for normal applications.
6. All standard ROSS filters and lubricators with polycarbonate plastic bowls are designed for compressed air applications only. Do *not* fail to use the metal bowl guard, where provided, to minimize danger from high pressure fragmentation in the event of bowl failure.

Do not expose these products to certain fluids, such as alcohol or liquefied petroleum gas, as they can cause bowls to rupture, creating a combustible condition, hazardous leakage, and the potential for human injury or damage to property. Immediately replace a crazed, cracked, or deteriorated bowl. When bowl gets dirty, replace it or wipe it with a clean dry cloth.

7. Only use lubricants which are compatible with materials used in the valves and other components in the system. Normally, compatible lubricants are petroleum based oils with oxidation inhibitors, an aniline point between 180°F (82°C) and 220°F (104°C), and an ISO 32, or lighter, viscosity. Avoid oils with phosphate type additives which can harm polyurethane components, potentially leading to valve failure which risks human injury, and/or damage to property.

## AVOID INTAKE/EXHAUST RESTRICTION

8. Do not restrict the air flow in the supply line. To do so could reduce the pressure of the supply air below the minimum requirements for the valve and thereby cause erratic action.
9. Do not restrict a valve's exhaust port as this can adversely affect its operation. Exhaust silencers must be resistant to clogging and must have flow capacities at least as great as the exhaust capacities of the valves. Contamination of the silencer can result in reduced flow and increased back pressure.

*ROSS expressly disclaims all warranties and responsibility for any unsatisfactory performance or injuries caused by the use of the wrong type, wrong size, or an inadequately maintained silencer installed with a ROSS product.*

## ENERGY ISOLATION/EMERGENCY STOP

11. Per specifications and regulations, ROSS L-O-X® valves and L-O-X® valves with EEZ-ON® operation are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

## ROSS PRODUCTS STANDARD WARRANTY

All products sold by ROSS CONTROLS are warranted for a one-year period [with the exception of all Filters, Regulators and Lubricators ("FRLs") which are warranted for a period of seven years] from the date of purchase to be free of defects in material and workmanship. ROSS' obligation under this warranty is limited to repair or replacement of the product or refund of the purchase price paid solely at the discretion of ROSS and provided such product is returned to ROSS freight prepaid and upon examination by ROSS is found to be defective. This warranty becomes void in the event that product has been subject to misuse, misapplication, improper maintenance, modification or tampering.

THE WARRANTY EXPRESSED ABOVE IS IN LIEU OF AND EXCLUSIVE OF ALL OTHER WARRANTIES AND ROSS EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED WITH RESPECT TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ROSS MAKES NO WARRANTY WITH RESPECT TO ITS PRODUCTS MEETING THE PROVISIONS OF ANY GOVERNMENTAL OCCUPATIONAL SAFETY AND/OR HEALTH LAWS OR REGULATIONS. IN NO EVENT IS ROSS LIABLE TO PURCHASER, USER, THEIR EMPLOYEES OR OTHERS FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM A BREACH OF THE WARRANTY DESCRIBED ABOVE OR THE USE OR MISUSE OF THE PRODUCTS. NO STATEMENT OF ANY REPRESENTATIVE OR EMPLOYEE OF ROSS MAY EXTEND THE LIABILITY OF ROSS AS SET FORTH HEREIN.



**GLOBAL Reach with a LOCAL Touch<sup>SM</sup>**

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This catalog presents an overview of the extensive ROSS product line. Other literature is available for engineering, maintenance, and service requirements. If you need products or specifications not shown here, please contact ROSS or your ROSS distributor. They will be happy to assist you in selecting the best product for your application.

