Pneumatic Valve Systems

Hazardous Locations

Class1 Div2

Table of Contents

Ex Group II,Zone 2, Category 3 G

G3 Electronic displays its innovations !

Innovative Graphic Display is used for easy commissioning, visual status & diagnostics

Commissioning Capatibilities

- Set network address
- Set baud rate
- Set auto or manual I/O sizes
- Set fault/idle output states
- Set factory defaults

Visual Diagnostics

- Shorted and open load detection
- Shorted sensor/cable detection
- Low & missing power detection
- Missing module detection
- Self-tests activation

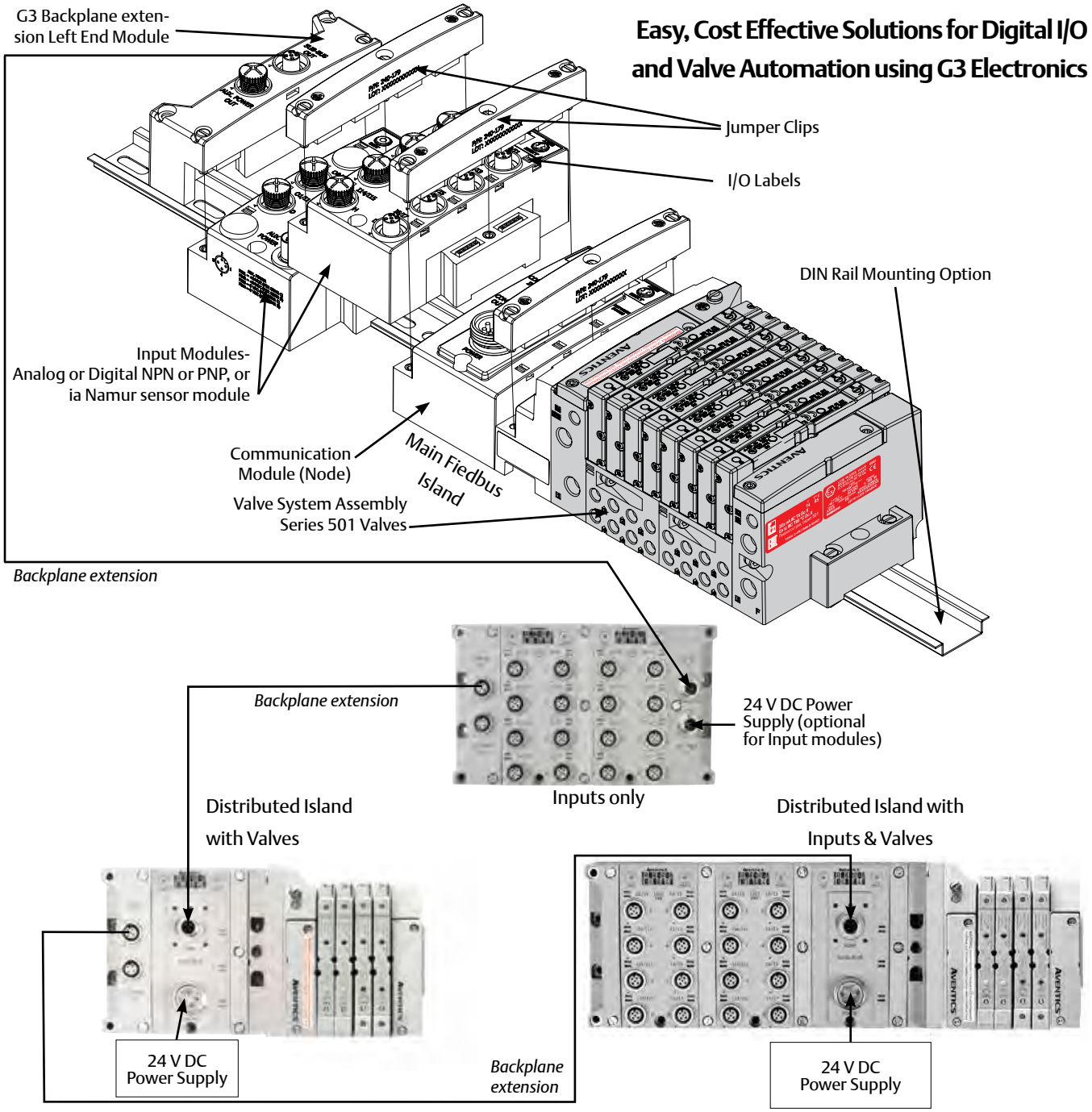
Graphic Display for configuration & diagnostics

Easy, Robust Connections

Benefits:

- Power connector scheme allows output power to be removed while inputs and communication are left active
- IP65 Protection
- Novel “clip” design allows easy module removal/replacement without dismantling manifold
- Interfaces to valves with flow from 400 up to 650 l/min ANR
- “On line” CAD files, 85 formats

Easy, Cost Effective Solutions for Digital I/O and Valve Automation using G3 Electronics



Distribution Benefits:

- Up to 1.200 Input/1.200 Output capability with one communication node!
- Up to 16 distributed manifolds, with max. 30 m backplane extension length
- Input modules connectable to valve side
- ia Namur sensor
- Analog or digital inputs (PNP or NPN)
- Distributed plug & play design, no configuration required

Supported protocols:

- DeviceNet™ w/ QuickConnect™
- EtherNet/IP™
- Modbus® TCP
- PROFIBUS™ DP
- EtherCAT®
- PROFINET™
- Ethernet POWERLINK®
- CANopen®
- EtherNet/IP™ DLR w/ QuickConnect™
- CC Link IE Field™

Modbus is a registered trademark of Modbus Organization, Inc.
EtherNet/IP, DeviceNet and QuickConnect are trademarks of ODVA.
EtherCAT is a registered trademark of the EtherCAT Technology Group.

Pneumatic characteristics:

- 5/2 monostable or bistable, 5/3 and dual 3/2 spool valves
- Valve module width: 11 mm
- Flow rates: 400 l/min (ANR)
- Plug-together flexibility for easy exchange of valves without pneumatic or electrical disconnection
- IP65 protection

Operating Data:

- 100% ED: 24 V DC
- Power:

⚠ **Each distributed modules must have its own power supply connection (24 V DC).**

G3 (inrush/holding): 0.82 W/0.33 W
580/599 (cold/hot) : 0.7 W/0.8W

CANopen is a registered Community trademark of CAN in Automation e.V.
PROFIBUS and PROFINET are trademarks of Profibus Nutzerorganisation e.V.
Ethernet POWERLINK is a registered trademark of Bernecker + Rainer Industrie – Elektronik Ges.m.b.H.
CC-Link is a registered trademark and CC-Link IE Field is a trademark of the CC-Link Partner Association.

AVENTICS™ Spool Valves

Features

- *High flow rate up to 400 l/min*
- *Wide electrical connection selection : G3 or 580 Fieldbus Electronics, 25 or 37 Pin Sub-D connector, 19 Pin Round connector or Terminal Strip*
- *Internal or external pilot pressure supply capability*
- *Version with integrated LED and electrical protection. LED indicator visible from 3 sides*
- *Solenoid air operated valves for use in potentially explosive atmospheres according to ATEX-Directive, zone 2, IECEx system and CUTR*
- *580 Electronics*

General

Operating pressure	See «SPECIFICATIONS» [1 bar =100 kPa]
Ambient temperature range (TS)	See «SPECIFICATIONS»
Rated flow	See «SPECIFICATIONS»
conforming to ISO 6358	C (5/2) = 1.45 x 10^{-8} m^3/s.Pa (sonic conductance) b (5/2) = 0.40 (critical pressure ratio)
Pneumatic base	3 & 4 station subbases
Connection	Joinable subbase
Response time	See «SPECIFICATIONS»

Fluids (✶)	Temperature range (TS)	Technology	Seal materials (✶)
air or inert gas ISO 8573 Level 7.4.4	-10°C to +50°C	rubber packed	FPM (fluoroelastomer)

Materials in contact with fluid

(✶) Ensure that compatibility of materials in contact with fluids is verified.

Body	Zamak, E-coating treatment
Spool	Aluminium
Piston	POM
Spring	Stainless steel
Other seals	NBR
Other materials	PAM (polyarylamide) , GF 50% (glass fiber reinforced)
Subbases	Aluminium, E-coating treatment

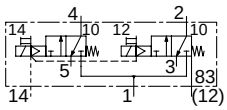
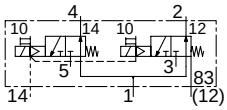
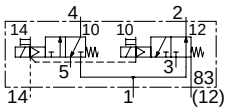
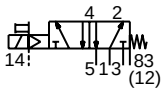
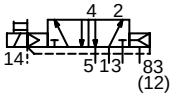
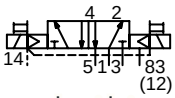
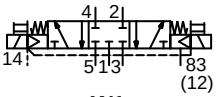
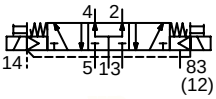
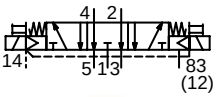
Electrical characteristics

Coil insulation class	F
Electrical safety	IEC-EN 60730-1 / IEC-EN 60730-2-8
Electrical enclosure protection	IP65 (EN 60529)
Standard voltages	DC (=): 24V
Power ratings (=)	G3: 0.81 W/0.33 W (inrush/holding) 580 CHARMs: 0.81 W/0.33 W (inrush/holding) 580/599: 0.7 W / 0.8 W (hot/cold)

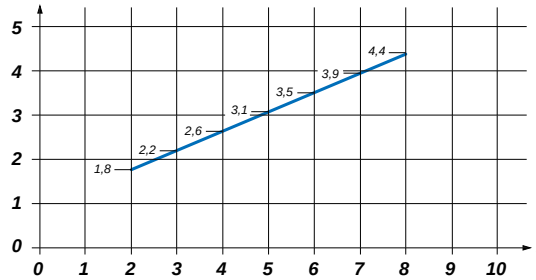
Ex Certification

II 3G Ex ec IIC T4 Gc

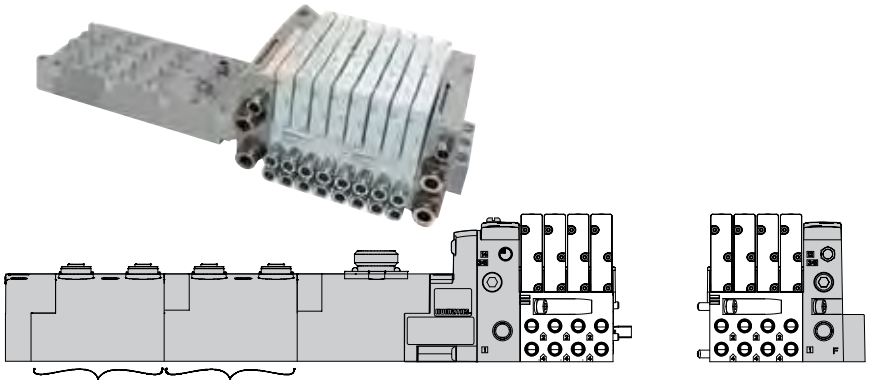
Specifications

Function	Type	Symbol Pilot (14) Return (12)	Rated flow at 6.3 bar ΔP 1 bar l/min (ANR) 1→2 1→4	 2→3 4→5	Response time Open / Closed (ms)	Pilot pressure at 23°C (bar) Min.	 Max.	Operating pressure port 1 Min.	 Max. (PS) Air (∗) =	Catalog number
SPOOL VALVE, RUBBER PACKED TECHNOLOGY, WITH IMPULSE MANUAL OPERATOR										
2 x 3/2 NC	K	 spring	405	415	18 / 18	(a)	8	2	8	**R501A2BD0M71WF1**
2 x 3/2 NO	N	 spring	400	400	18 / 18	(a)	8	2	8	**R501A2BA0M71WF1**
2 x 3/2 NC - NO	H	 spring	460 450	470 450	18 / 18	(a)	8	2	8	**R501A2BC0M71WF1**
5/2	S	 spring	405	410	14 / 29	2	8	-0.95	8	**R501A2B10M71WF1**
	M	 differential return	405	410	25 / 21	2	8	-0.95	8	**R501A2BN0M71WF1**
	J	 solenoid air	405	410	11 / 11	2	8	-0.95	8	**R501A2B40M71WF1**
5/3	G	 **W1** closed centre position	405	410	13 / 12	2	8	-0.95	8	**R501A2B60M71WF1**
	B	 **W2** centre open to pressure	405	360	17 / 38	2.5	8	-0.95	8	**R501A2B70M71WF1**
	E	 **W3** centre open to exhaust	365	415	27 / 12	2	8	-0.95	8	**R501A2B50M71WF1**

Pp = Pilot pressure



P1 = Working pressure



0, 1.. 2

Manifold assemblies kit (Electronic + End plate)

Configurator - CAD Files

PRODUCT CODE

G 501 A V 3 H 1 0 0 V 71W

Thread connection
G = ISO 228/1
8 = NPT (contact us)
K = Push-in connectors

Product series
501 (11 mm valve)

Revision letter
A = Initial release

Product type
V = Valve Manifold Assembly

Electronics
8 = **580 Fieldbus Electronics**
D = CHARMs Electronics
3 = **G3 Fieldbus Electronics**
J = 25 Pin Sub-D Connector
M = 37 Pin Sub-D Connector
Q = 19 Pin Round Connector
R = 26 Pin Round Connector
T = Terminal Strip 1-32

Number of Valve Stations

501			
A = NA/33	**I** = 9/41	**Q** = 17	**Y** = 25
B = NA/34	**J** = 10/42	**R** = 18	**Z** = 26
C = 3/35	**K** = 11/43	**S** = 19	**2** = 27
D = 4/36	**L** = 12/44	**T** = 20	**3** = 28
E = NA/37	**M** = 13/45	**U** = 21	**4** = 29
F = 6/38	**N** = 14/46	**V** = 22	**5** = 30
G = 7/39	**O** = 15/47	**W** = 23	**6** = 31
H = 8/40	**P** = 16/48	**X** = 24	**7** = 32

	max. coils
25 Pin Sub-D Connector	22
37 Pin Sub-D Connector Terminal Strip 1-32	32
19 Pin Round Connector	16
26 Pin Round Connector	22
G3	128 (1)/ 32 (2)
580	128 (3)/ 32 (4)
580 CHARMs	48

Options
71W = Prepared for Ex approvals
D45 (1) = 71W + DRM
84S (2) = 71W + 14X
72P (3) = 71W + 14X + DRM
(1) DIN Rail Mount

(2) External pilot supply from port 14

(3) External pilot supply from port 14 and DIN Rail Mount

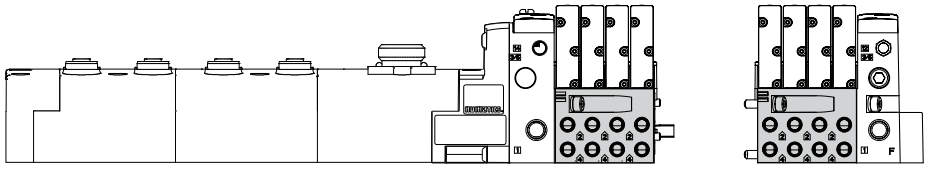
End Plate Style
V = Vertical

Valve Station Adder
0 = No Adder
1 = 32+
2 = 64+
3 = 96+

End Plate Port Size (1-3-5)
Used with the first digit «G» or «8»:
1 = 1/8 (female thread only)
Used with the first digit «K»:
H = 6 x 8 mm (push-in connector)
2 = 1/4
G = 5/16

26.4 V maxi / 6.9 V maxi CHARM

(1) PROFIBUS™ DP, PROFINET™, SUB-BUS node, EtherNet/IP™ DLR, EtherCAT®, Ethernet POWERLINK®, Modbus® TCP, CC Link IE Field™
(2) DeviceNet™, CANopen®
(3) PROFIBUS™ DP, PROFINET™, SUB-BUS node, EtherNet/IP™ DLR, EtherCAT®, Ethernet POWERLINK®
(4) DeviceNet™, CANopen®, IO-Link Class A, IO-Link Class B



Subbases

PRODUCT CODE

H 501 A M S4 2 M 71W 1 0

Thread connection
H = Metric thread
K = Push-in connectors

Product series
501 (11 mm valve)

Revision letter
A = Initial release

Product type
M = Manifold base
Z = Mid station supply
F = 32+ Solenoid Manifold Subbase

Mounting
S3 = Manifold base, 3 stations, side port, single Z-Board™
M3 = Manifold base, 3 stations, side port, double Z-Board™
S4 = Manifold base, 4 stations, side port, single Z-Board™
M4 = Manifold base, 4 stations, side port, double Z-Board™
Q4 = Manifold base, 4 stations, side port, single Z-Board™ Panel Mount
P4 = Manifold base, 4 stations, side port, double Z-Board™ Panel Mount
M8 = 32+ Manifold Sub Base, 8 Stations, Side Ports, Double Z-Board™

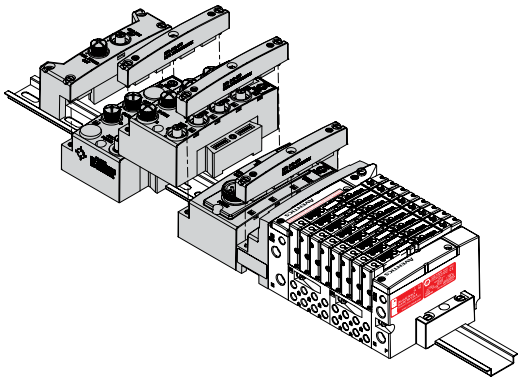
Port connection
B = M7 (female thread only)
D = 2.7 x 4 mm [push-in connector only] (Mid station supply not available)
F = 4 x 6 mm [push-in connector only]
2 = 1/4 (push-in fittings only)

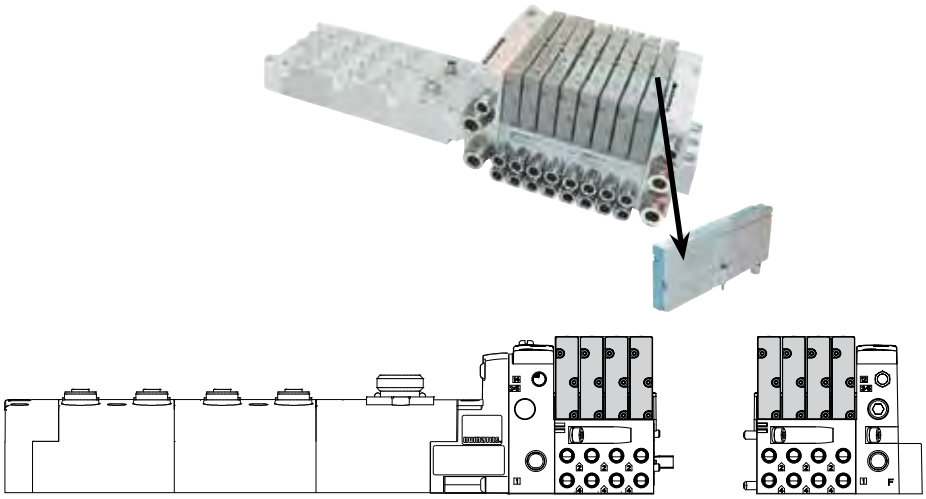
Wiring option
M = Plug-in Receptable assembly
T = 32+ Solenoid Auxiliary Power (used with M4 and F)

Options
71W = Prepared for Ex approvals
85H [(1)] = 71W + 96X
[(1)] 4 mm Port Size Override for Stations 5-8 of the 128 Solenoid Manifold Sub Base

Interface
1 = High flow

Not use





Valves

PRODUCT CODE

R	501	A	2	B	4	0	M	71W	F1

Thread connection
R = Pad mount

Product series
501 (11 mm valve)

Revision letter
A = Initial release

Actuation
2 = Rubber packed

Valve type
B = Solenoid pilot

Function
A = 2x3/2 NO, dual 3-way
C = 2x3/2 NCx NO, dual 3-way
D = 2x3/2 NC, dual 3-way
F = 2x3/2 NOxNC, dual 3-way
N = 5/2, Differential air return
1 = 5/2, spring return
4 = 5/2, solenoid air return
5 = 5/3, W3, open center to exhaust
6 = 5/3, W1, center closed
7 = 5/3, W2, open center to pressure

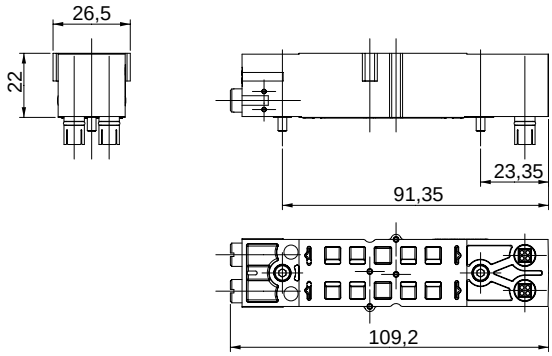
Voltage - class
F1 = 24 V DC - class F

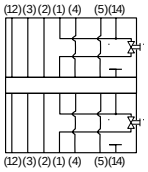
Options
71W = Prepared for Ex approvals (With impulse manual operator)
82L = 71W + 11B (With maintained manual operator)
84A = 71W + 11M (Without manual operator)

Electrical interface
M = Plug-in (with LED indicator / DC)

Sandwich shut off block

- Used to shut-off pressure to the valve which is mounted above it.
- Allows easy maintenance without the need to shut-off pressure to the whole manifold. (provided for 2x3/2 NC-NC valve)





Usable only for internal pilot supply island

Pay attention to residual pressures

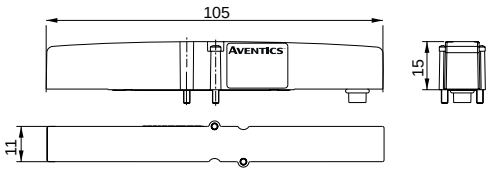
The valve(s) should not be energised during disassembly

Catalog number	Description	**weight** (kg)
R501AY428501002	Sandwich shut off block (double)	0.11

HOW TO ORDER
Check the online configurator for available versions on Emerson.com/aventics

Blank station plate kit

- Used to block off a manifold station block for future use



Catalog number	Description	**weight** (kg)
P501AB429685002	Blank station plate kit	0.027

Blocking Discs

	Port	Catalog number
+ 1	1	**P501AD431915001**
+ 3	3	**P501AD431915002**
+ 5	5	**P501AD431915003**
+ 1/3	1 + 3	**P501AD431915004**
+ 1/5	1 + 5	**P501AD431915005**
+ 3/5	3 + 5	**P501AD431915006**
+ 1/3/5	1, 3, 5	**P501AD431915007**

How to Order

G3 Electronics

G3 EP1 00 D 0 71W

Electronics Protocols

DN1	=	DeviceNet™
ED1	=	EtherNET/IP™ DLR
EM1	=	ModBus® TCP/IP
PT1	=	PROFIBUS™ DP
PN1	=	PROFINET®
DS2	=	Backplane extension Valve Manifold
DS3	=	Backplane extension I/O Assembly
CO1	=	CANopen®
EC1	=	EtherCAT®
PL1	=	Ethernet POWERLINK®
CC1	=	CC-Link IE Field

Number of I/O Modules

00	=	0
01	=	1
02	=	2
03	=	3
04	=	4
05	=	5
06	=	6
07	=	7
08	=	8

Ex:
⚠ 8 modules max. per bloc.

Left Mounting

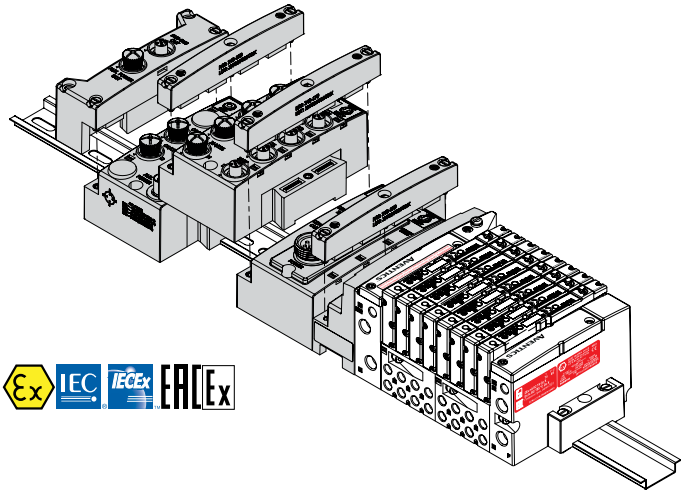
D	=	w/ Backplane extension Out
R	=	w/ Terminating Resistor

Options

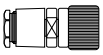
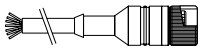
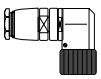
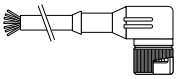
71W	=	Prepared for Ex approvals
D45	=	71W + DRM-DIN Rail Mounting
D46	=	71W + E23-Fieldbus assembly without valves
F20	=	71W + E23-Fieldbus assembly without valves + DRM-DIN Rail Mounting

Modification

0	=	Initial release



Connectors

Accessory type	Designation			Catalog number
	25 Pin Sub-D Female Connector (500 series)	w/ cable	2 m	NDB25F22U02MSB3
			5 m	NDB25F22U05MSB3
			10 m	NDB25F22U10MSB3
	37 Pin Sub-D Female Connector (500 series)	w/ cable	2 m	NDB37F22U02MSB3
			5 m	NDB37F22U05MSB3
			10 m	NDB37F22U10MSB3
	19 pin female M23 connector, straight (500 and 2000 series)	w/o cable	-	88164102
		w/ cable	5 m	88164106
	19 pin female M23 connector, 90° elbow (500 and 2000 series)	w/o cable	-	88164105
		w/ cable	5 m	88164107

NDB25F22U02MSB3
NDB25F22U05MSB3
NDB25F22U10MSB3

Pin 1	: white
Pin 2	: brown
Pin 3	: green
Pin 4	: yellow
Pin 5	: grey
Pin 6	: pink
Pin 7	: blue
Pin 8	: red
Pin 9	: black
Pin 10	: purple
Pin 11	: grey/pink
Pin 12	: red/blue
Pin 13	: white/green
Pin 14	: brown/green
Pin 15	: white/yellow
Pin 16	: yellow/brown
Pin 17	: white/grey
Pin 18	: grey/brown
Pin 19	: white/pink
Pin 20	: pink/brown
Pin 21	: white/blue
Pin 22	: brown/blue
Pin 23	: white/red
Pin 24	: brown/red
Pin 25	: white/black

NDB37F22U02MSB3
NDB37F22U05MSB3
NDB37F22U10MSB3

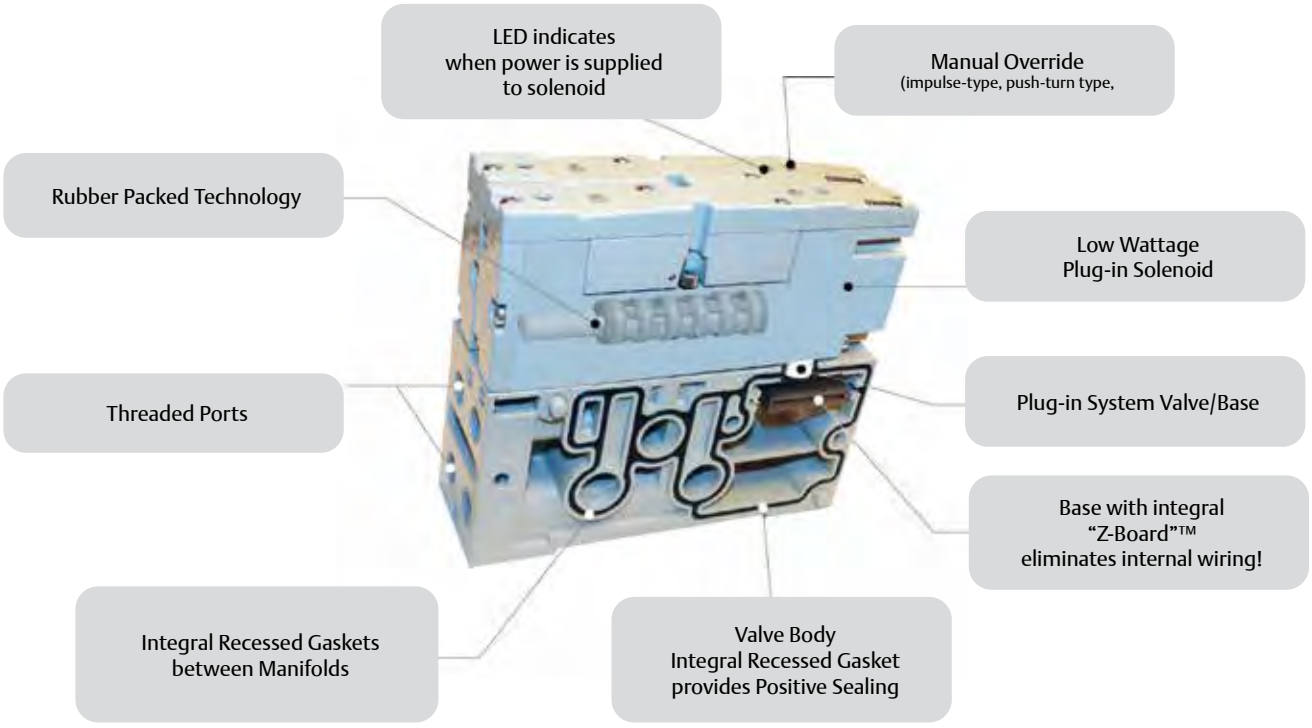
Pin 1	: white	Pin 26	: brown/black
Pin 2	: brown	Pin 27	: grey/green
Pin 3	: green	Pin 28	: yellow/grey
Pin 4	: yellow	Pin 29	: pink/green
Pin 5	: grey	Pin 30	: yellow/pink
Pin 6	: pink	Pin 31	: green/blue
Pin 7	: blue	Pin 32	: yellow/blue
Pin 8	: red	Pin 33	: green/red
Pin 9	: black	Pin 34	: yellow/red
Pin 10	: purple	Pin 35	: green/black
Pin 11	: grey/pink	Pin 36	: yellow/black
Pin 12	: red/blue	Pin 37	: grey/blue
Pin 13	: white/green		
Pin 14	: brown/green		
Pin 15	: white/yellow		
Pin 16	: yellow/brown		
Pin 17	: white/grey		
Pin 18	: grey/brown		
Pin 19	: white/pink		
Pin 20	: pink/brown		
Pin 21	: white/blue		
Pin 22	: brown/blue		
Pin 23	: white/red		
Pin 24	: brown/red		
Pin 25	: white/black		

Table of Contents

Islands Series 502, Group II, Zone 2, Category 3 G

Technical Data • Operating Data

Manifolds of Series 502 valves are equipped with integral electrical plug-in allowing an easy exchange of single components without dismounting the manifold.
"Z-Board"™ eliminates internal wiring.
Manifolds are available with threaded ports.
Exhaust ports 12 and 14 are integrated in the base with common exhaust at port 12.



Picture shows single solenoid pilot actuated 5-port., 2-pos. valve mounted on manifold

Multipole Connectors • General Information

Features and Benefits

- *Solenoid air operated valve manifolds for connection to a control system (PLC) with a multiwire cable for simple wiring.*
- *Electrical connection with a 25 or 37 pin Sub-D connector or a 19 pin round connector, or with terminal strip.*
- *Internal wiring by "Z-Board" plug-in system.*
- *Plug-together flexibility due to different assembly and wiring options.*
- *Designed to meet IP65 with round connector or terminal strip.*

Combinations

- The maximum number of valves depends on the type of electrical connection chosen:

	Max. coils
25 Pin Sub-D Connector	22
37 Pin Sub-D Connector Terminal Strip 1-32	32
19 Pin Round Connector	16
26 Pin Round Connector	22
G3	80 (1)/ 32 (2)
580	80 (3)/ 32 (4)
580 CHARMs	48

G3 and 580 protocols available with ATEX, IECEx, EACEx:

G3	580	Pneumatic valve
DeviceNet™ EtherNET/IP™ ModBus® TCP/IP PROFIBUS™ DP PROFINET® CANopen® EtherCAT® Ethernet POWERLINK® CC-Link IE Field	CHARM DeviceNet™ EtherCAT Powerlink CANopen PROFIBUS™ DP PROFINET® IO-Link® (Class A & Class B)	501 502

G3 and 580 protocols available with ATEX, IECEx, EACEx, Class 1 Div 2:

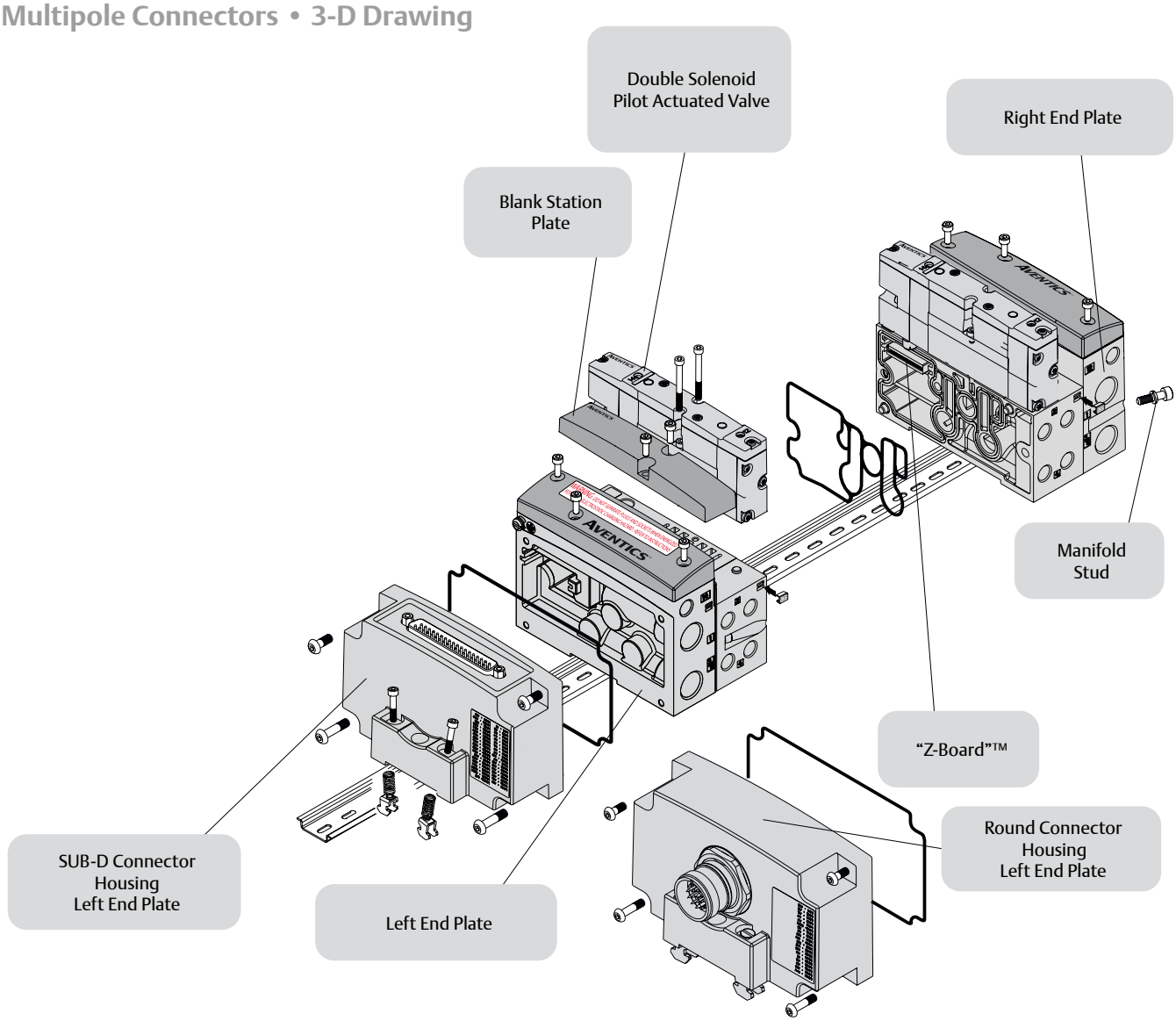
G3	580	Pneumatic valve
DeviceNet™ EtherNET/IP™ ModBus® TCP/IP PROFIBUS™ DP PROFINET® CANopen® EtherCAT® Ethernet POWERLINK®	DeviceNet™ EtherCAT Powerlink CANopen PROFIBUS™ DP PROFINET® IO-Link® (Class A & Class B)	502

26.4 V max. / 6.9 V max. CHARM

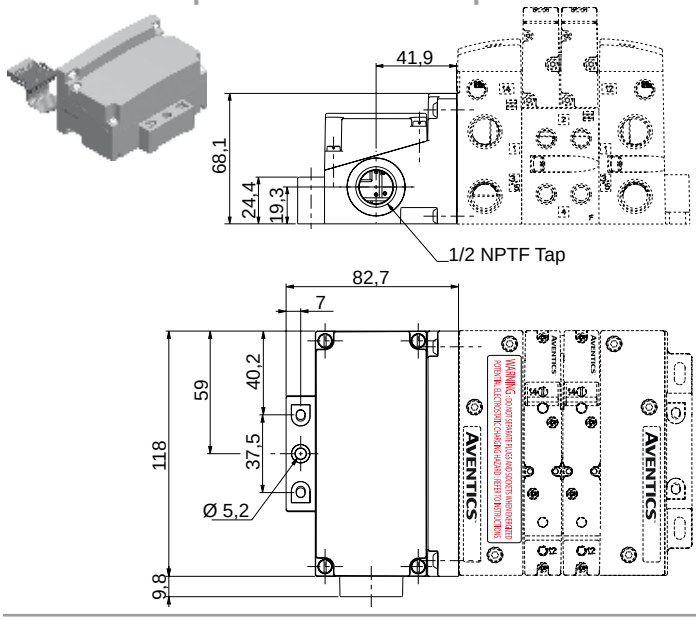
(1) PROFIBUS™ DP, PROFINET™, SUB-BUS node, EtherNET/IP™ DLR, EtherCAT®, Ethernet POWERLINK®, MODBUS® TCP, CC Link IE Field™
(2) DeviceNet™, CANopen®
(3) PROFIBUS™ DP, PROFINET®, SUB-BUS node, EtherNET/IP™ DLR
(4) DeviceNet™, CANopen®, IO-Link Class A, IO-Link Class B

- The valve manifolds are intended for frame or DIN-EN 50022 rail mounting.

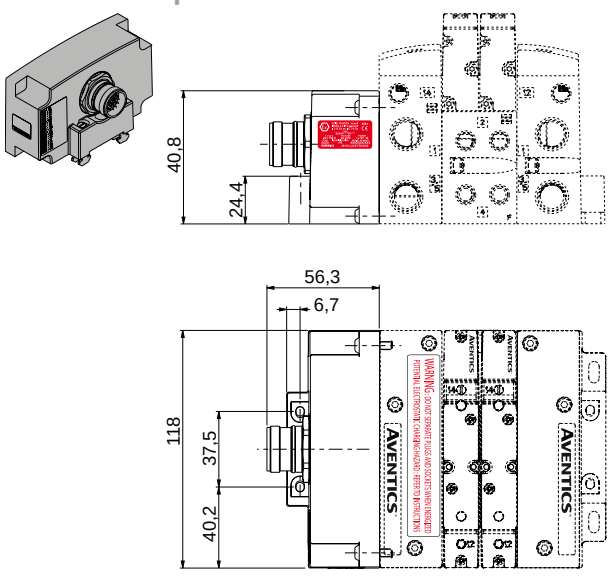
Multipole Connectors • 3-D Drawing



End plate with terminal strip



End plate with round connector



Features and Benefits

- *High flow rate up to 650 l/min*
- *Spool & Sleeve or rubber packed technology in the same dimension body*
- *Wide electrical connection selection : G3 or 580 Fieldbus Electronics, 25 or 37 Pin Sub-D connector, 19 Pin Round connector or Terminal Strip*
- *Internal or external pilot pressure supply capability*
- *Compliance with ISO standard 15407-2 18 mm*
- *Solenoid air operated valves which can be mounted on manifold bases*
- *580 Electronics*

General

Operating pressure	See «SPECIFICATIONS» [1 bar =100 kPa]
Ambient temperature range (TS)	See «SPECIFICATIONS»
Rated flow conforming to ISO 6358	See «SPECIFICATIONS» C (5/2) = 28 x 10^{-9} m^3/s.Pa (sonic conductance) b (5/2) = 0.26 (critical pressure ratio)
Pneumatic base	High flow subbase or ISO 15407-2 18 mm
Connection	Joinable subbase
Response time	See «SPECIFICATIONS»

Fluids (∗)	Temperature range (TS)	Technology	Seal materials (∗)
air or inert gas ISO 8573 Level 7.4.4	-10°C to +50°C	rubber packed	PUR (polyurethane)

Materials in contact with fluid

(∗) Ensure that compatibility of materials in contact with fluids is verified.

Body	Aluminium, E-coating treatment
Spool	Aluminium or st. steel (spool & sleeve)
Piston	POM (rubber packed)
Spring	Stainless steel
Distribution seals	PUR (spool & sleeve)
Other seals	NBR
Other materials	PA (polyamide) GF 50% (glass fiber reinforced)
Subbases	Aluminium, E-coating treatment

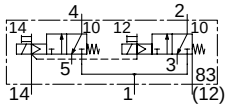
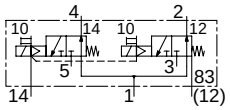
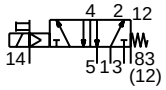
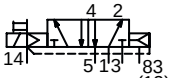
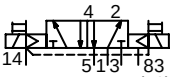
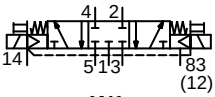
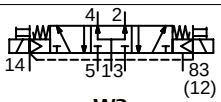
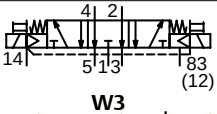
Electrical characteristics

Coil insulation class	F
Electrical safety	IEC-EN 60730-1 / IEC-EN 60730-2-8
Electrical enclosure protection	IP65 (EN 60529)
Standard voltages	DC (=) : 24V
Power ratings (hot/cold) (=)	G3: 1.31 W/0.54 W (inrush/holding) 580 CHARMs: 1.31 W/0.54 W (inrush/holding) 580/599: 0.7 W / 0.8 W (hot/cold)

Ex Certification

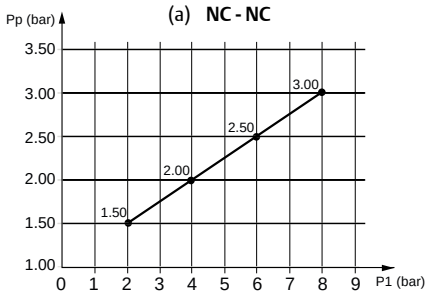
II 3G Ex ec IIC T4 Gc

Specifications

Function	Type	Symbol Pilot (14) Return (12)	Interface	Rated flow at 6.3 bar ΔP 1 bar l/min (ANR) 1→2 1→4	Rated flow 2→3 4→5	Response time Open / Closed (ms)	Pilot pressure at 23°C (bar) Min.	Pilot pressure Max.	Operating pressure Port 1 Min.	Operating pressure max. (PS) Air (✶) =	Catalog number
SPOOL VALVE, RUBBER PACKED TECHNOLOGY, WITH IMPULSE MANUAL OPERATOR											
2 x 3/2 NC	K	 spring	High flow subbase	650	600	39 / 19	(a)	8	2	8	**R502A2BD0M71WF1**
			ISO subbase	500	440						
2 x 3/2 NO	N	 spring	High flow subbase	580	570	19 / 26	(b)	8	2	8	**R502A2BA0M71WF1**
			ISO subbase	500	470						
5/2	S	 spring	High flow subbase	630	660	17 / 38	3	8	-0.95	8	**R502A2B10M71WF1**
			ISO subbase	510	510						
	M	 differential return	High flow subbase	630	660	17 / 44	2	8	-0.95	8	**R502A2BN0M71WF1**
			ISO subbase	510	510						
	J	 solenoid air	High flow subbase	630	660	14 / 14	2	8	-0.95	8	**R502A2B40M71WF1**
			ISO subbase	510	510						
5/3	G	 **W1** closed centre position	High flow subbase	560	610	18 / 18	3	8	-0.95	8	**R502A2B60M71WF1**
			ISO subbase	490	490						
	B	 **W2** centre open to pressure	High flow subbase	490	390	21 / 27	3	8	-0.95	8	**R502A2B70M71WF1**
			ISO subbase	390	390						
	E	 **W3** centre open to exhaust	High flow subbase	430	530	36 / 21	3	8	-0.95	8	**R502A2B50M71WF1**
			ISO subbase	390	470						

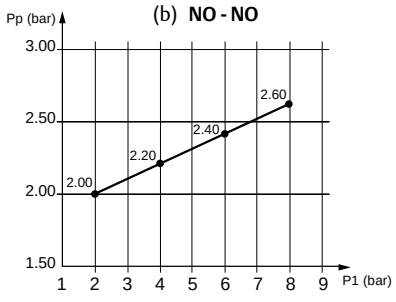
(✶) Ensure that compatibility of materials in contact with fluids is verified.

Pp = Piloting pressure

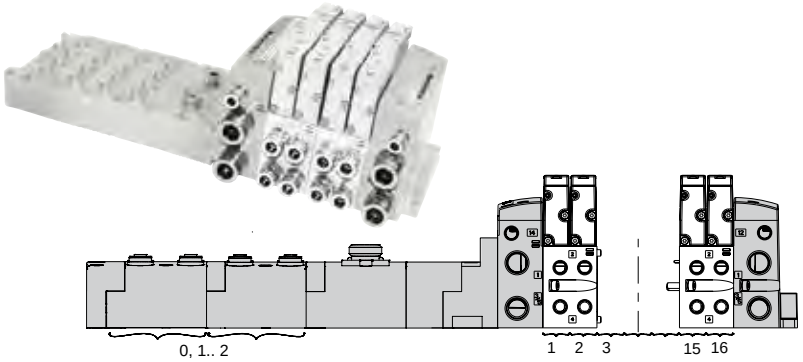


P1 = Working pressure

Pp = Piloting pressure



P1 = Working pressure



Manifold assemblies kit (Electronic + End plate)

Configurator - CAD Files

PRODUCT CODE

G 502 A V 3 H 1 0 0 V 71W

Thread connection
G = ISO 228/1
8 = NPT (contact us)
K = Push-in connectors

Product series
502 (18 mm valve)

Revision letter
A = Initial release

Product type
V = Valve Manifold Assembly

Electronics
8 = **580 Fieldbus Electronics**
D = CHARMs Electronics
3 = **G3 Fieldbus Electronics**
J = 25 Pin Sub-D Connector
M = 37 Pin Sub-D Connector
Q = 19 Pin Round Connector
R = 26 Pin Round Connector
T = Terminal Strip 1-32

Number of Valve Stations

502

B = 2/34/66	**R** = 18/50
D = 4/36/68	**T** = 20/52
F = 6/38/70	**V** = 22/54
H = 8/40/72	**X** = 24/56
J = 10/42/74	**Z** = 26/58
L = 12/44/76	**3** = 28/60
N = 14/46/78	**5** = 30/62
P = 16/48/80	**7** = 32/64

Options
71W = Prepared for Ex approvals
D45 (1) = 71W + DRM
84S (2) = 71W + 14X
72P (3) = 71W + 14X + DRM
(1) DIN Rail Mount

(2) External pilot supply from port 14

(3) External pilot supply from port 14 and DIN Rail Mount

End Plate Style
V = Vertical

Valve Station Adder
0 = No Adder
1 = 32+
2 = 64+

End Plate Port Size (1-3-5)
Used with the first digit «G» or «8»:
3 = 3/8 (manifold base)
Used with the first digit «K»:
K = 8 x 10 mm (push-in connector)
M = 10 x 12 mm (push-in connector)
4 = 1/2

26.4 V max. / 6.9 V max. CHARM

	Max. coils
25 Pin Sub-D Connector	22
37 Pin Sub-D Connector Terminal Strip 1-32	32
19 Pin Round Connector	16
26 Pin Round Connector	22
G3	80 (1)/ 32 (2)
580	80 (3)/ 32 (4)
580 CHARMs	32

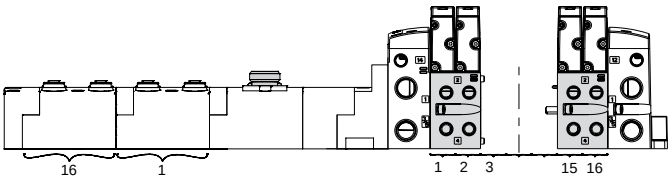
(1) PROFIBUS™ DP, PROFINET™, SUB-BUS node, EtherNet/IP™ DLR, EtherCAT®, Ethernet POWERLINK®, Modbus® TCP, CC Link IE Field™
(2) DeviceNet™, CANopen®
(3) PROFIBUS™ DP, PROFINET™, SUB-BUS node, EtherNet/IP™ DLR, EtherCAT®, Ethernet POWERLINK®
(4) DeviceNet™, CANopen®, IO-Link Class A, IO-Link Class B

G3 and 580 protocols available with ATEX, IECEx, EACEx:

G3	580	Pneumatic valve
DeviceNet™ EtherNET/IP™ ModBus® TCP/IP PROFIBUS™ DP PROFINET® CANopen® EtherCAT® Ethernet POWERLINK® CC-Link IE Field	CHARM DeviceNet™ EtherCAT Powerlink CANopen PROFIBUS™ DP PROFINET® IO-Link® (Class A & Class B)	501 502

G3 and 580 protocols available with ATEX, IECEx, EACEx, Class 1 Div 2:

G3	580	Pneumatic valve
DeviceNet™ EtherNET/IP™ ModBus® TCP/IP PROFIBUS™ DP PROFINET® CANopen® EtherCAT® Ethernet POWERLINK®	DeviceNet™ EtherCAT Powerlink CANopen PROFIBUS™ DP PROFINET® IO-Link® (Class A & Class B)	502



Configurator - CAD Files

Subbases

PRODUCT CODE

G 502 A M S2 2 M 71W 1 0

Thread connection
G = ISO 228/1
8 = NPT (contact us)
K = Push-in connectors

Product series
502 (18 mm valve)

Revision letter
A = Initial release

Product type
M = Manifold base
Z = Mid station supply

Mounting
S2 = Manifold base, 2 stations, side port, single Z-Board™
M2 = Manifold base, 2 stations, side port, double Z-Board™

Not use

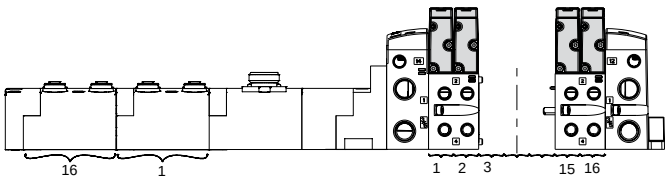
Interface
1 = Pneumatic high flow

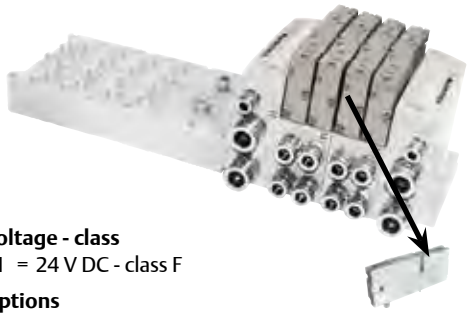
ATEX options
71W = Prepared for Ex approvals

Wiring option
M = Plug-in

Port connection (2-4)
Used with the first digit «G» or «8»:
2 = 1/8 (female thread only)

Used with the first digit «K»:
F = 4 x 6 mm [push-in connector only]
H = 6 x 8 mm [push-in connector only]





Valves

PRODUCT CODE

R 502 A 2 B 1 0 M 71W F1

Thread connection
R = Pad mount

Product series
502 (18 mm valve)

Revision letter
A = Initial release

Actuation
2 = Rubber packed

Valve type
B = Solenoid pilot
(With impulse manual operator)

Function
A = 2x3/2 NO, dual 3-way
D = 2x3/2 NC, dual 3-way
N = 5/2, Differential air return
1 = 5/2, spring return
4 = 5/2, solenoid air return
5 = 5/3, W3, open center to exhaust
6 = 5/3, W1, center closed
7 = 5/3, W2, open center to pressure

Voltage - class
F1 = 24 V DC - class F

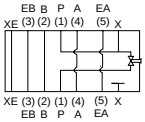
Options
71W = Prepared for Ex approvals
(With impulse manual operator) (1)
82L = 71W + 11B
(With maintained manual operator)
84A = 71W + 11M
(Without manual operator)

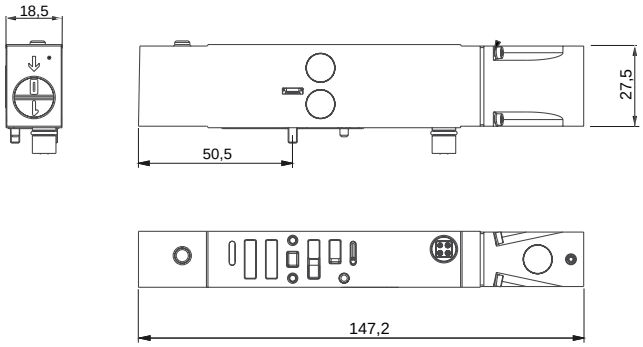
Electrical interface
M = Plug-in (with LED indicator / DC)

(1) Used external spool valves (internal/external supply configurated in the end plate kits).
For internal piloting, contact us.

Sandwich shut off block

- Used to shut-off pressure to the valve which is mounted above it.
- Allows easy maintenance without the need to shut-off pressure to the whole manifold. (provided for 5/2 valve, spring return, and 2x3/2 NC-NC)





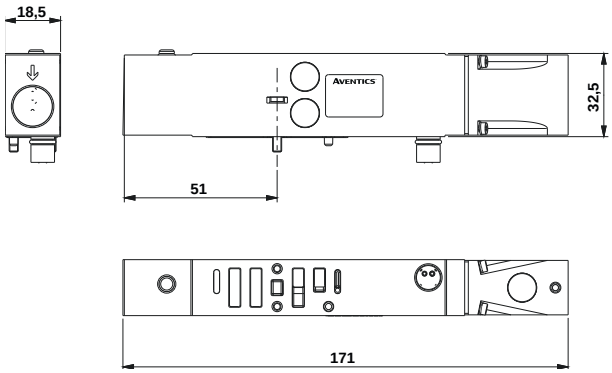
	Catalog number	Description
502	R502AY429409003	High Flow - Sandwich shut off block

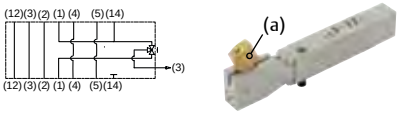
	weight (kg)
502	0.145

⚠ **Usable only for internal pilot supply island**

⚠ **Pay attention to residual pressures**

⚠ **The valve(s) should not be energised during disassembly**





	Catalog number	Description
502	R502AY429409006	High Flow - Lockable shut off block

(a) The Lock is in not included with this accessory.

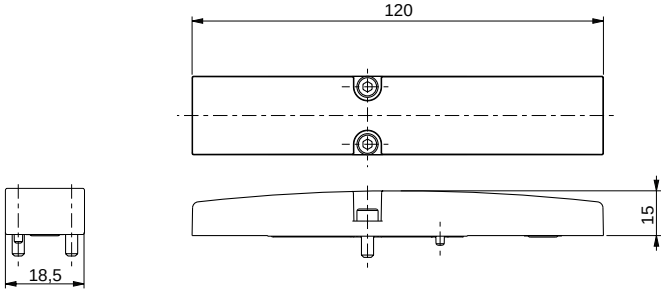
	weight (kg)
502	0.176

HOW TO ORDER

Check the online configurator for available versions on Emerson.com/aventics

Blank station plate kit

- Used to block off a manifold station block for future use



PRODUCT CODE	weight (kg)
P502AB431813002	0.052

Blocking Discs

	Port	Catalog number
+ 1	1 ⚠	P502AD431914001
+ 3	3	P502AD431914002
+ 5	5	P502AD431914003
+ 1/3	1 + 3	P502AD431914004
+ 1/5	1 + 5	P502AD431914005
+ 3/5	3 + 5	P502AD431914006
+ 1/3/5	1, 3, 5	P502AD431914007

⚠ **External pilot only.**

How to Order

G3 Electronics

G3 ED1 00 D 0 71W

Electronics Protocols

DN1	=	DeviceNet™
ED1	=	EtherNET/IP™ DLR
EM1	=	ModBus® TCP/IP
PT1	=	PROFIBUS™ DP
PN1	=	PROFINET®
DS2	=	Backplane extension Valve Manifold
DS3	=	Backplane extension I/O Assembly
CO1	=	CANopen®
EC1	=	EtherCAT®
PL1	=	Ethernet POWERLINK®
CC1	=	CC-Link IE Field

Number of I/O Modules

00	=	0
01	=	1
02	=	2
03	=	3
04	=	4
05	=	5
06	=	6
07	=	7
08	=	8

Ex:
⚠ 8 modules max. per bloc.

Left Mounting

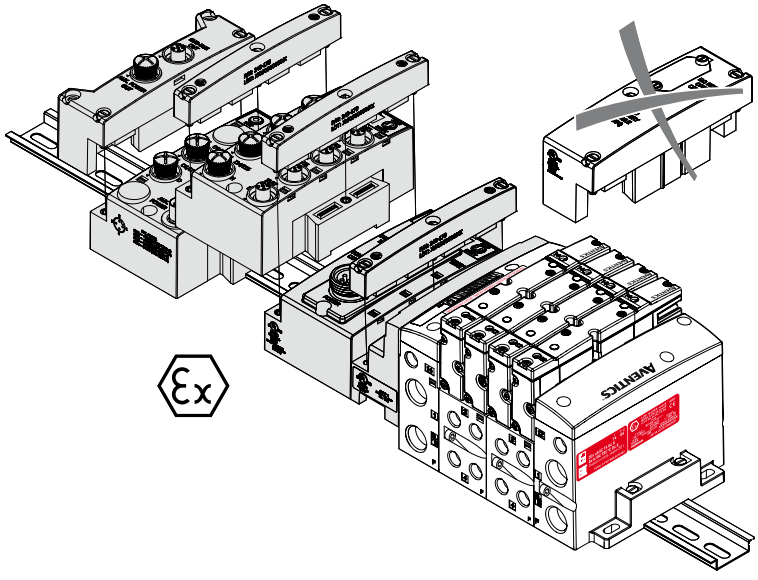
D	=	w/ Backplane extension Out
H	=	w/ Terminating Resistor

Options

71W	=	Version ATEX
D45	=	71W + DRM-DIN Rail Mounting
D46	=	71W + E23-Fieldbus assembly without valves
F20	=	71W + E23-Fieldbus assembly without valves + DRM-DIN Rail Mounting

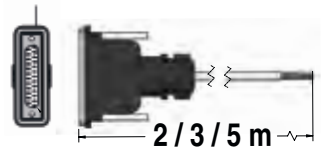
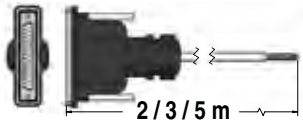
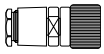
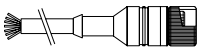
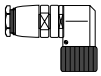
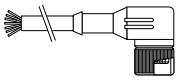
Modification

0	=	Initial release



⚠ No usable for ATEX

Connectors

Accessory type	Designation			Catalog number
	25 Pin Sub-D Female Connector (500 series)	w/ cable	2 m	NDB25F22U02MSB3
			5 m	NDB25F22U05MSB3
			10 m	NDB25F22U10MSB3
	37 Pin Sub-D Female Connector (500 series)	w/ cable	2 m	NDB37F22U02MSB3
			5 m	NDB37F22U05MSB3
			10 m	NDB37F22U10MSB3
	19 pin female M23 connector, straight (500 and 2000 series)	w/o cable		88164102
		w/ cable	5 m	88164106
	19 pin female M23 connector, 90° elbow (500 and 2000 series)	w/o cable		88164105
		w/ cable	5 m	88164107

NDB25F22U02MSB3 NDB25F22U05MSB3 NDB25F22U10MSB3
Pin 1 : white
Pin 2 : brown
Pin 3 : green
Pin 4 : yellow
Pin 5 : grey
Pin 6 : pink
Pin 7 : blue
Pin 8 : red
Pin 9 : black
Pin 10 : purple
Pin 11 : grey/pink
Pin 12 : red/blue
Pin 13 : white/green
Pin 14 : brown/green
Pin 15 : white/yellow
Pin 16 : yellow/brown
Pin 17 : white/grey
Pin 18 : grey/brown
Pin 19 : white/pink
Pin 20 : pink/brown
Pin 21 : white/blue
Pin 22 : brown/blue
Pin 23 : white/red
Pin 24 : brown/red
Pin 25 : white/black

NDB37F22U02MSB3 NDB37F22U05MSB3 NDB37F22U10MSB3	
Pin 1 : white	Pin 26 : brown/black
Pin 2 : brown	Pin 27 : grey/green
Pin 3 : green	Pin 28 : yellow/grey
Pin 4 : yellow	Pin 29 : pink/green
Pin 5 : grey	Pin 30 : yellow/pink
Pin 6 : pink	Pin 31 : green/blue
Pin 7 : blue	Pin 32 : yellow/blue
Pin 8 : red	Pin 33 : green/red
Pin 9 : black	Pin 34 : yellow/red
Pin 10 : purple	Pin 35 : green/black
Pin 11 : grey/pink	Pin 36 : yellow/black
Pin 12 : red/blue	Pin 37 : grey/blue
Pin 13 : white/green	
Pin 14 : brown/green	
Pin 15 : white/yellow	
Pin 16 : yellow/brown	
Pin 17 : white/grey	
Pin 18 : grey/brown	
Pin 19 : white/pink	
Pin 20 : pink/brown	
Pin 21 : white/blue	
Pin 22 : brown/blue	
Pin 23 : white/red	
Pin 24 : brown/red	
Pin 25 : white/black	

G3 Electronic displays its innovations !

Innovative Graphic Display is used for easy commissioning, visual status & diagnostics

Commissioning Capatibilities

- Set network address
- Set baud rate
- Set fault/idle output states
- Set factory defaults

Visual Diagnostics

- Shorted and open load detection
- Shorted sensor/cable detection
- Low & missing power detection
- Missing module detection
- Self-tests activation
- Log of network errors / Distribution errors

Graphic Display for configuration & diagnostics

Easy, Robust Connections

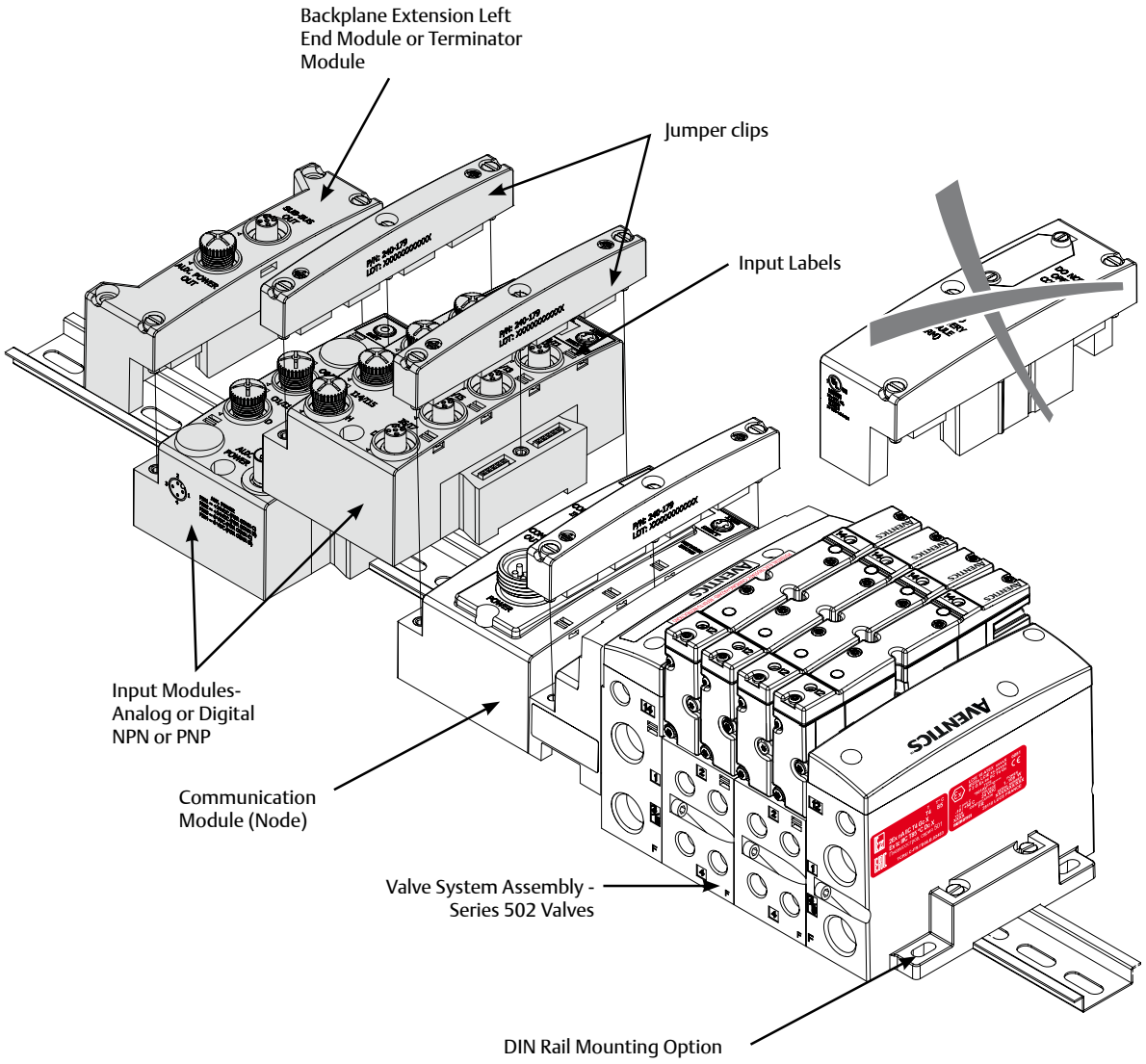
Benefits:

- Power connector scheme allows output power to be removed while inputs and communication are left active
- IP65 Protection
- Novel “clip” design allows easy module removal/replacement without dismantling manifold
- Interfaces to valves with flow from 400 up to 650 l/min ANR
- “On line” CAD files, 85 formats

G3 Electronics Modularity

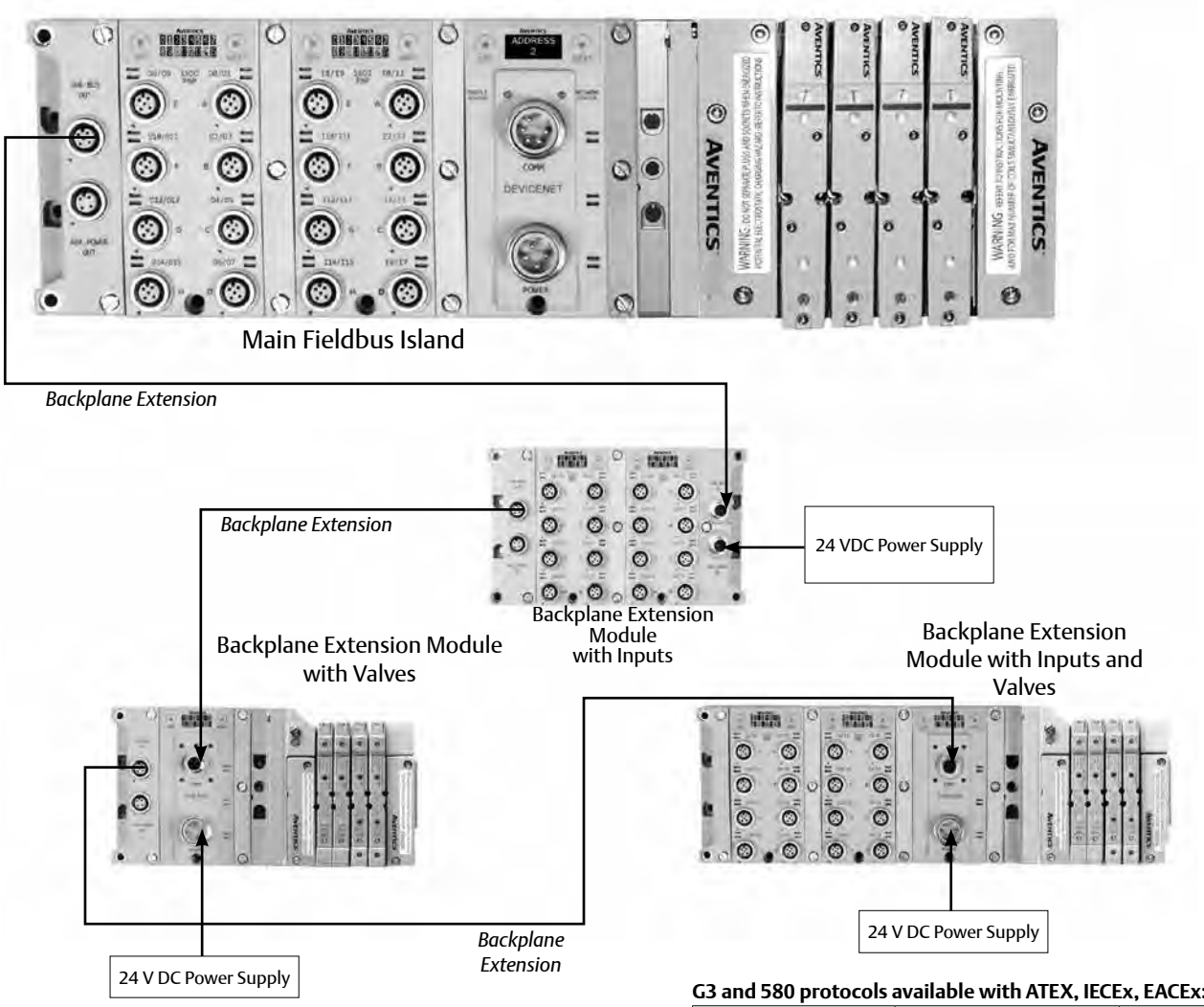
Digital Inputs

The G3 Series product line is a completely modular system. All of the G3 electronic modules plug together, via mechanical clips, allowing easy assembly and field changes. This makes the system highly distributable. Additional flexibility is incorporated because the same modules can be used in either centralised or distributed applications.



G3 Platform Distribution Options

Easy, Cost-Effective Solutions for Valve Automation



Distribution benefits

- Up to 1.200 Input / 1.200 Output capability with one communication node!
- 32 valve solenoid per manifold up to 16 manifolds per communication node
- One node supports 16 Input modules - analog Input, digital Input (NPN & PNP)
- Plug & play distribution capability without the need for special configuration

⚠ Each distributed modules must have its own power supply connection (24 V DC).

G3 and 580 protocols available with ATEX, IECEx, EACEx:

G3	580	Pneumatic valve
DeviceNet™ EtherNET/IP™ DLR(1) ModBus® TCP/IP(1) PROFIBUS™ DP(1) PROFINET®(1) CANopen®(1) EtherCAT®(1) Ethernet POWERLINK®(1) CC-Link IE Field(1)	CHARM DeviceNet™ EtherCAT Powerlink CANopen PROFIBUSTM DP PROFINET® IO-Link® (Class A & Class B)	501 502

G3 and 580 protocols available with ATEX, IECEx, EACEx, Class 1 Div 2:

G3	580	Pneumatic valve
DeviceNet™ EtherNET/IP™ DLR(1) ModBus® TCP/IP(1) PROFIBUS™ DP(1) PROFINET®(1) CANopen®(1) EtherCAT®(1) Ethernet POWERLINK®(1)	DeviceNet™ EtherCAT Powerlink CANopen PROFIBUSTM DP PROFINET® IO-Link® (Class A & Class B)	502

(1) 32+ capable.

01451GB-2022/R01

G3 Platform Distribution Options

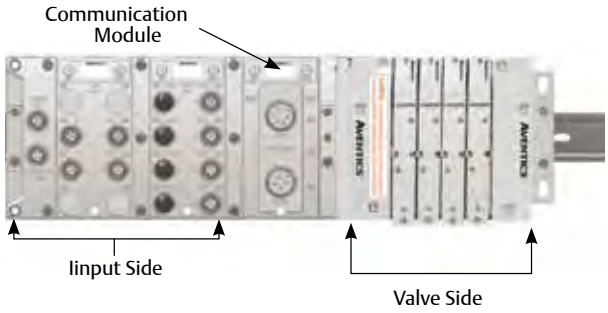
The G3 platform is flexible to the point that there are a virtually infinite number of Inputs distribution options using the few basic G3 modules. The following basic rules should be followed in the configuration of your control architecture.

Valve Side

- The number of coils authorised depends on the number of input modules associated with the pneumatic distribution.

	max. coils	
	501	**502** (*)
25 Pin Sub-D Connector	22	22
37 Pin Sub-D Connector Terminal Strip 1-32	32	32
19 Pin Round Connector	16	16
26 Pin Round Connector	22	22
G3	128 (1)/ 32 (2)	80 (1)/ 32 (2)
580 (**)	128 (3)/ 32 (4)	80 (3)/ 32 (4)
580 CHARMs	48	48

Typical Main Fieldbus Island



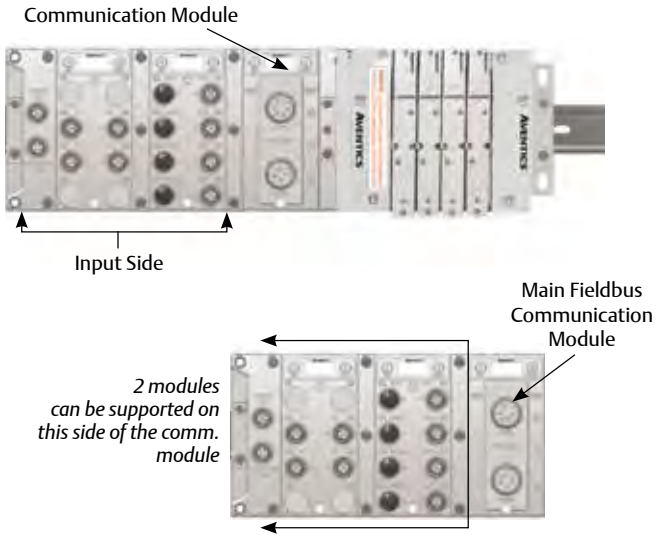
26.4 V max. / 6.9 V max. CHARM

(1) PROFIBUS-DP®, PROFINET®, SUB-BUS node, EtherNET/IP™ DLR, EtherCAT®, POWERLINK, MODBUS TCP/IP, CC-Link
(2) DeviceNet™, CANopen®, DEVICE LOGIX
(3) PROFIBUS-DP®, PROFINET®, EtherNET/IP™ DLR
(4) DeviceNet™, IO-Link Class A, IO-Link Class B

(*) UL class 1 div 2 is NOT available for the 501
(**) UL class 1 div 2 is NOT available for the 580 CHARMs

Input Side Distribution - Distributed mode

- A total of 8 modules can be integrated into the network and controlled by the main fieldbus communication module (Node)
- Modules include analog and digital I/O modules providing addressing capacity for up to 1200 Inputs/1200 Outputs per node
- Unique distribution system allows system efficiency by allowing the same modules to be used in either centralised or distributed applications.
- Distribution options include Inputs only, valves with Inputs.
- Configuration can include up to 8 of the following modules:
  - Digital Input modules
  - Backplane extension valve modules
  - Analog Input modules



Ex CERTIFICATION

- Ex Directive
- Apparatus suitable for use in Ex Group II, Category 3, gas (G)
- Temperature class: T4 (gas)
- Ambient temperature range: -10°C ≤ Ta ≤ +50°C (501/502)
- Marking: **II 3G Ex ec IIC T4 Gc** (ATEX, IECEx, EACEx for 501 and 502 / ATEX, IECEx, EACEx, Class 1 Div 2 for 502)

SPECIAL CONDITIONS FOR SAFE USE

- The apparatus must be installed in a control cabinet with a protection degree of min. IP54 in conformance with standards EN/IEC 60079-0 and EN/IEC 60079-7.
  For gas and dust application (Zone 2 and 22). The control cabinet must conform to EN 60079-31 additionally with a protection degree of IP54 or IP65 minimum depending on dust category.
- **WARNING – LIVE PARTS: DO NOT DISCONNECT CONNECTORS FROM SOCKETS WHILE POWER IS ON**
- The cross-section of the ground cable must be equal to the minimum cross-section of the supply cable. Provide for equipotential bonding between the apparatus and the control cabinet.
- Electrical connections must be made by qualified personnel to ensure reliable operation. The contact pressure of electrical connections must be maintained during regular operation.
- **WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS**
- Precautions shall be taken to guard against any effect due to the presence of circulating current caused by stray magnetic fields.
- Avoid all static charge build-up on the apparatus.
- No air movement inside the cabinet.
-

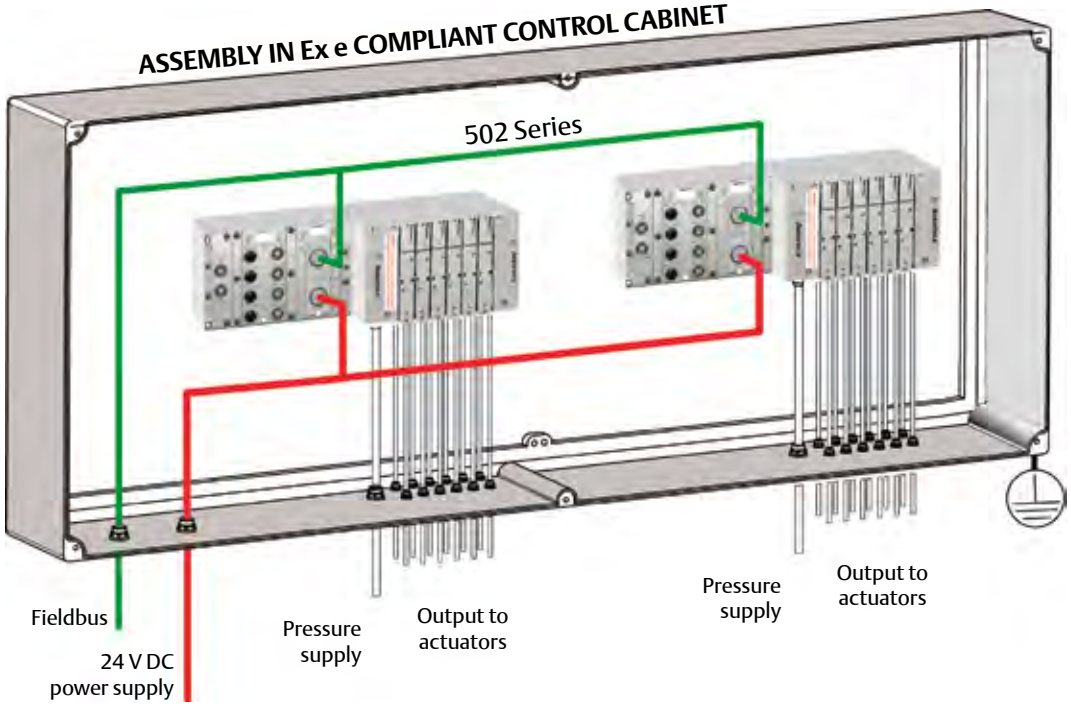
	max. coils	
	501	**502** (*)
25 Pin Sub-D Connector	22	22
37 Pin Sub-D Connector Terminal Strip 1-32	32	32
19 Pin Round Connector	16	16
26 Pin Round Connector	22	22
G3	128 (1)/ 32 (2)	80 (1)/ 32 (2)
580 (**)	128 (3)/ 32 (4)	80 (3)/ 32 (4)
580 CHARMs	48	32

26.4 V max. / 6.9 V max. CHARM

(1) PROFIBUS-DP®, PROFINET®, SUB-BUS node, EtherNET/IP™ DLR, EtherCAT®, POWERLINK, MODBUS TCP/IP, CC-Link
(2) DeviceNet™, CANopen®, DEVICE LOGIX
(3) PROFIBUS-DP®, PROFINET®, EtherNET/IP™ DLR
(4) DeviceNet™, IO-Link Class A, IO-Link Class B

(*) UL class 1 div 2 is NOT available for the 501
(**) UL class 1 div 2 is NOT available for the 580 CHARMs

- The internal temperature of the cabinet may not exceed the minimum and maximum temperatures specified on the product.
- Do not disassemble any component of the device except when replacing spare parts.
- The specifications of IP54 min. must be met when installing the device in the cabinet.



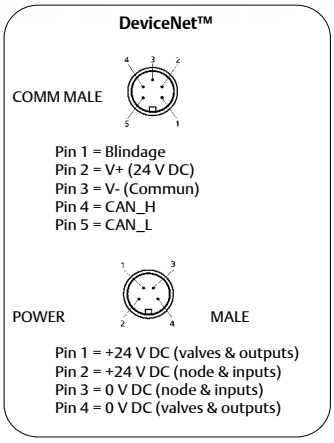
DeviceNet™

DeviceNet™ is an open bus fieldbus communication system developed by Allen-Bradley based on Controller Area Network (CAN) technology. The governing body for DeviceNet™ is the Open DeviceNet™ Vendors Association (ODVA). The ODVA controls the DeviceNet™ specification and oversees product conformance testing.

Aventics' G3 nodes for DeviceNet™ have an integrated graphic display and are capable of addressing combinations of up to 1200 outputs and 1200 inputs.

They have been tested and approved for conformance by the ODVA.

More information about DeviceNet™ and the ODVA can be obtained from the following website:
www.odva.org



Description	Replacement Part Number
DeviceNet™ communications module (node)	**240-331**

Technical Data

Electrical Data	Voltage	Current
Node Power at Max. Brightness	24 V DC +/- 10%	0.0404 A
BUS Power	11-25 V DC	0.025 A
Valves & Discrete I/O	24 V DC +/- 10%	8 A Maximum
Power Connector	Single key 4 pin 7/8" MINI type (male)	
Communication Connector	Single key 5 pin 7/8" MINI type (male)	
LEDs	Module Status and Network Status	
Operating Data		
Temperature Range (ambient)	-20°C to +50°C (Electronics only)	
Humidity	95% relative humidity, non-condensing	
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6	
Moisture Protection	IP65, IP67 (with appropriate assembly and termination)	
Configuration Data		
Graphic Display	Display used for setting Node Address, Baud Rate, Fault/Idle Actions, DeviceNet QuickConnect and all other system settings.	
Maximum Valve-Solenoid Outputs	32 (Series 501), 32 (Series 502)	
Maximum Addressable I/O Points	Various combinations of 1200 outputs and 1200 inputs	
Network Data		
Supported Baud Rates	125K Baud, 250K Baud, 500K Baud, with Auto-Baud detection	
Supported Connection Type	Polled, Cyclic, Change of State (COS) and combination Message Capability	
Communication Connector	Single key 5 pin 7/8" MINI type (male)	
Diagnostics	Power, short, open load conditions and module health are monitored	
Special Features	Supports Auto-Device Replacement (ADR) and fail-safe device settings	
Weight		
DeviceNet™ Communication Module	252 g	
Certification		
II 3G Ex ec IIC T4 Gc (ATEX, IECEx, EACEx for 501 and 502 / ATEX, IECEx, EACEx, Class 1 Div 2 for 502)		

DeviceNet™ bus connection

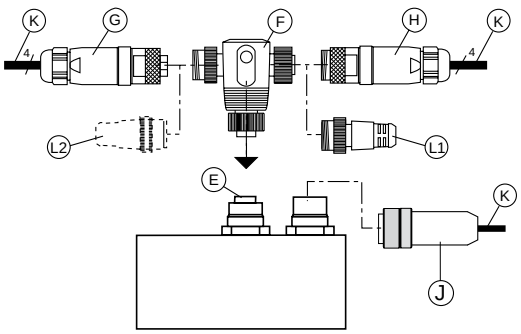
the front panel of the communication module for DeviceNet™ is equipped with a 5 pin 7/8 - 16 UN male socket (E).

The bus can be connected in the two following ways:

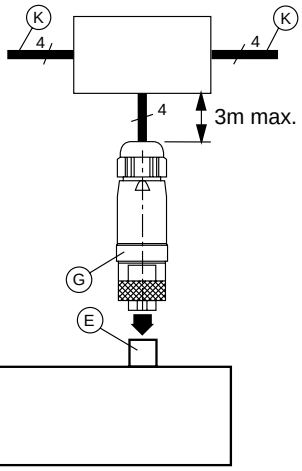
- directly to the module with a T-connector;
- with a straight connector, cable (max. length: 3 m) and a DeviceNet distributor box.

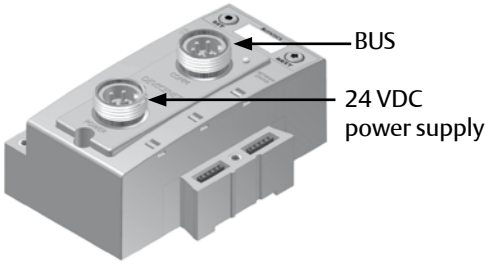
The modules on either side of the system must be provided with terminating resistors (L1 or L2).

▪ Wiring with T-connector



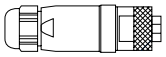
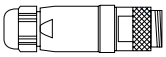
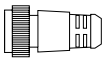
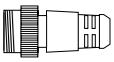
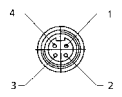
▪ Connection with DeviceNet™ distributor box (X)





Accessories for DeviceNet™

The modules on either side of the system must be provided with terminating resistors (H)

	Accessory	Description	Catalog number
G		5 pin straight 7/8-16 UN female connector	**88161930**
H		5 pin straight 7/8-16 UN male connector	**88161931**
F		T-connector 7/8-16 UN, 5 male / female / female pins	**88161932**
L1		Terminating resistor female plug 120 ohms	**88161933**
L2		Terminating resistor male plug 120 ohms	**88161934**
J		4 pin straight female cable connector 7/8”	**230-1003**
		4 pin elbow female cable connector 7/8”	**230-1001**
		4 pin elbow female cable connector 7/8” with 9.15 m cable  1 = brown 2 = white 3 = blue 4 = black	**230-950**

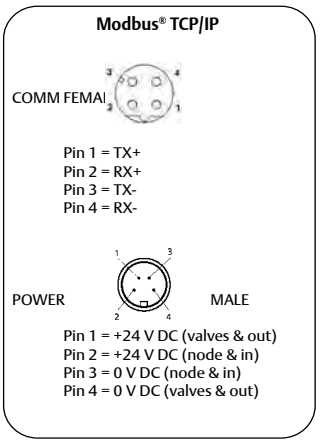
(K) Cable to be ordered separately.

Modbus® TCP/IP

Ethernet used throughout the world to network millions of PC's has now evolved into a viable industrial network. Ethernet is an open architecture high-level communication network that meets the demands of today's industrial applications requiring high-speed (10/100 Mbit/s), high-throughput and flexibility.
Additionally, Ethernet technology can integrate an on-board web server, which can make the node readily accessible for configuration, testing and even retrieval of technical documentation.

Aventics' G3 nodes for Modbus® TCP/IP have an integrated graphic display and are capable of addressing combinations of up to 1200 outputs and 1200 inputs.

Description	Replacement Part Number
Modbus® TCP/IP communications module (node)	**240-337**



Technical Data

Electrical Data	Voltage	Current
Node Power at Max. Brightness	24 V DC +/- 10%	0.0657 A
Valves & Discrete I/O	24 V DC +/- 10%	8 A maximum
Power Connector	Single key 4 pin 7/8" MINI type (male)	
Communication Connector	D-coded 4 pin M12 type (female)	
LEDs	Module Status, Network Status and Activity/Link	

Operating Data	
Temperature Range (ambient)	-20°C to +50°C (Electronics only)
Humidity	95% relative humidity, non-condensing
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6
Moisture Protection	IP65, IP67 (with appropriate assembly and termination)

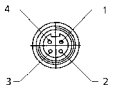
Configuration Data	
Graphic Display	Display used for setting IP Address, Subnet mask, Fault / Idle Actions, DHCP / BootP and all other system settings.
Maximum Valve-Solenoid Outputs	128 (Series 501), 80 (Series 502)
Maximum Addressable I/O Points	Various combinations of 1200 outputs and 1200 inputs

Network Data	
Supported Baud Rates	10 Mbit / 100 Mbit
Communication Connector	D-coded 4 pin M12 type (female)
Diagnostics	Power, short, open load conditions and module health are monitored
Special Features	Integrated web server and fail-safe device settings, HTTP, FTP, and UNICAST (for EtherNet/IP™)

Weight	
Modbus® TCP/IP Communications Module	255 g

Certification
II 3G Ex ec IIC T4 Gc (ATEX, IECEx, EACEx for 501 and 502 / ATEX, IECEx, EACEx, Class 1 Div 2 for 502)

Accessories for Modbus TCP

Accessory	Description		Catalog number
	M12 Straight 4 Pin Male D-Coded to Male RJ45 Cable - Shielded	5 m	QA0405MK0VA04000
		10 m	QA0410MK0VA04000
	M12 Straight 4 Pin Male D-Coded Field Wireable Connector PG 9 Cable Gland – Screw Terminal		QA04F20000000000
	4 pin straight female cable connector 7/8”		230-1003
	4 pin elbow female cable connector 7/8”		230-1001
	4 pin elbow female cable connector 7/8” with 9.15 m cable	 1 = brown 2 = white 3 = blue 4 = black	230-950

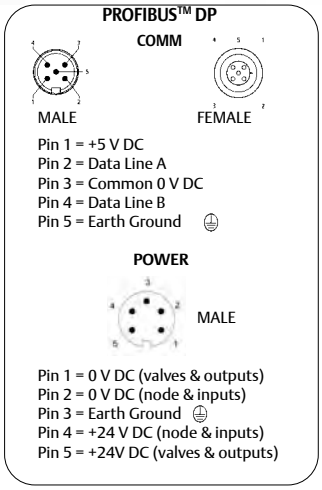
PROFIBUS™ DP

PROFIBUS™ DP is a vendor-independent, open fieldbus protocol designed for communication between automation control systems and distributed I/O at the device level.

Aventics' G3 nodes for PROFIBUS™ DP have an integrated graphic display and are capable of addressing combinations of up to 1200 outputs and 1200 inputs.

The G3 PROFIBUS™ DP nodes have been designed and tested to conform to the PROFIBUS™ standard EN50170. Certification has been done by the PROFIBUS™ Interface Center (PIC) according to the guidelines determined by the PROFIBUS™ Trade Organization (PTO). The certification process ensures interoperability for all PROFIBUS™ devices.

More information regarding PROFIBUS™ can be obtained from the following website: www.profibus.com



Description	Replacement Part Number
PROFIBUS™ DP communications module (node)	**240-333**

Technical Data

Electrical Data	Voltage	Current
Node Power at Max. Brightness	24 V DC +/- 10%	0.0623 A
Valves & Discrete I/O	24 V DC +/- 10%	8 A maximum
Power Connector	Single key 5 pin 7/8" MINI type (male)	
Communication Connector	Single reverse key (B-Coded) 5 pin M12 type (1 male and 1 female)	
LEDs	Module Status and Network Status	

Operating Data	
Temperature Range (ambient)	-20°C to +50°C (Electronics only)
Humidity	95% relative humidity, non-condensing
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6
Moisture Protection	IP65, IP67 (with appropriate assembly and termination)

Configuration Data	
Graphic Display	Display used for setting Node Address, Baud Rate, Fault/Idle Actions, and all other system settings.
Maximum Valve-Solenoid Outputs	128 (Series 501), 80 (Series 502)
Maximum Addressable I/O Points	Various combinations of 1200 outputs and 1200 inputs

Network Data	
Supported Baud Rates	125K Baud, 250K Baud, 500K Baud, with Auto-Baud detection
Communication Connector	Single reverse key (B-Coded) 5 pin M12 type (1 male and 1 female)
Diagnostics	Power, short, open load conditions and module health are monitored
Special Features	Supports Auto-Device Replacement (ADR) and fail-safe device settings

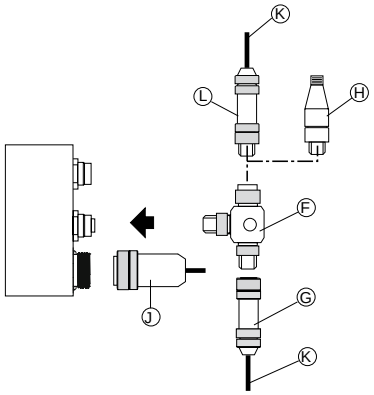
Weight	
PROFIBUS™ DP Communications Module	227 g

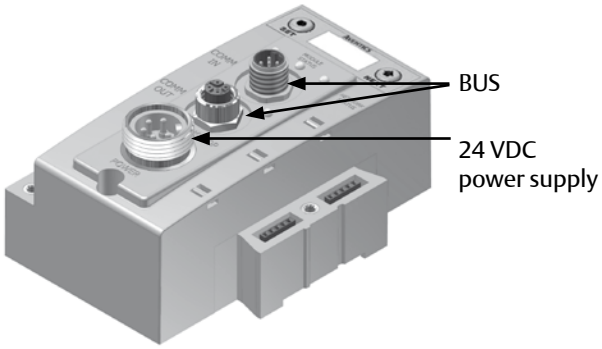
Certification
II 3G Ex ec IIC T4 Gc (ATEX, IECEx, EACEx for 501 and 502 / ATEX, IECEx, EACEx, Class 1 Div 2 for 502)

PROFIBUS™ DP bus connection

The front panel of the communication module for Profibus-DP® is equipped with:
- a 5 pin male 7/8" socket for power supply
- a 5 pin male M12-B socket or 5 pin female M12-A socket for the bus cable
  (with a T-connector on integrated M12 COM-IN/COM-OUT connector)

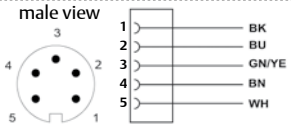
Wiring with T-connector





Accessories for PROFIBUS™ DP

The modules on either side of the system must be provided with terminating resistors (H)

	Accessory	Description	Catalog number
F		T-connector M12-B, 5 female / male / male pins (Profibus 12Mb max)	**88100712**
G		M12-B connector, 5 female pins - for cable dia. 6 - 8 mm (Profibus 12Mb max)	**88100713**
L		M12-B connector, 5 male pins - for cable dia. 6 - 8 mm (Profibus 12Mb max)	**88100714**
H		Terminating resistor M12-B - male plug	**88100716**
J		5 pin straight female cable connector 7/8"	**MC05F90000000000**
		5 pin elbow female cable connector 7/8"	**MD05F20000000000**
		5 pin elbow female cable connector 7/8" with 10 m cable single-ended, Euro colour code 	**MD0510MAG0000000**
		Dust cover - M12 female	**88157773**

(K) Cable to be ordered separately.

PROFINET™

PROFINET™ is the innovative open standard for Industrial Ethernet, development by Siemens and the PROFIBUS® User Organization (PNO). PROFINET™ complies to IEC 61158 and IEC 61784 standards. PROFINET™ products are certified by the PNO user organization, guaranteeing worldwide compatibility.

Aventics' G3 nodes for PROFINET™ IO (PROFINET™ RT) have an integrated graphic display and are capable of addressing combinations of up to 1200 outputs and 1200 inputs.

PROFINET™ is based on Ethernet and uses TCP/IP and IT standards and complements them with specific protocols and mechanisms to achieve a good Real Time performance.

More information regarding PROFINET™ can be obtained from the following website: www.profinet.com

Description	Replacement Part Number
PROFINET® communications module (node)	**240-334**

PROFINET™ COMM

FEMALE

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

POWER

MALE

Pin 1 = 0 V DC (valves & outputs)
Pin 2 = 0 V DC (node & inputs)
Pin 3 = Earth Ground ⏚
Pin 4 = +24 V DC (node & inputs)
Pin 5 = +24V DC (valves & outputs)

Technical Data

Electrical Data	Voltage	Current
Node Power at Max. Brightness	24 V DC +/- 10%	0.0903 A
Valves & Discrete I/O	24 V DC +/- 10%	8 A maximum
Power Connector	Single key 5 pin 7/8" MINI type (male)	
Communication Connector	Two D-coded 4 pin M12 type (female)	
LEDs	Module Status, Network Status and Activity/Link	

Operating Data	
Temperature Range (ambient)	-20°C to +50°C (Electronics only)
Humidity	95% relative humidity, non-condensing
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6
Moisture Protection	IP65, IP67 (with appropriate assembly and termination)

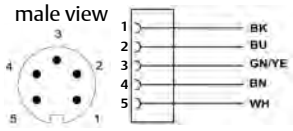
Configuration Data	
Graphic Display	Display used for setting IP Address, Subnet Mask, Fault/Idle Actions, and all other system settings.
Maximum Valve-Solenoid Outputs	128 (Series 501), 80 (Series 502)
Maximum Addressable I/O Points	Various combinations of 1200 outputs and 1200 inputs

Network Data	
Supported Baud Rates	10 Mbit / 100 Mbit
Communication Connector	Two D-coded 4 pin M12 type (female)
Diagnostics	Power, short, open load conditions and module health and configuration are monitored
Special Features	Integrated web server, Integrated 2 port switch and fail-safe device settings, and FSU

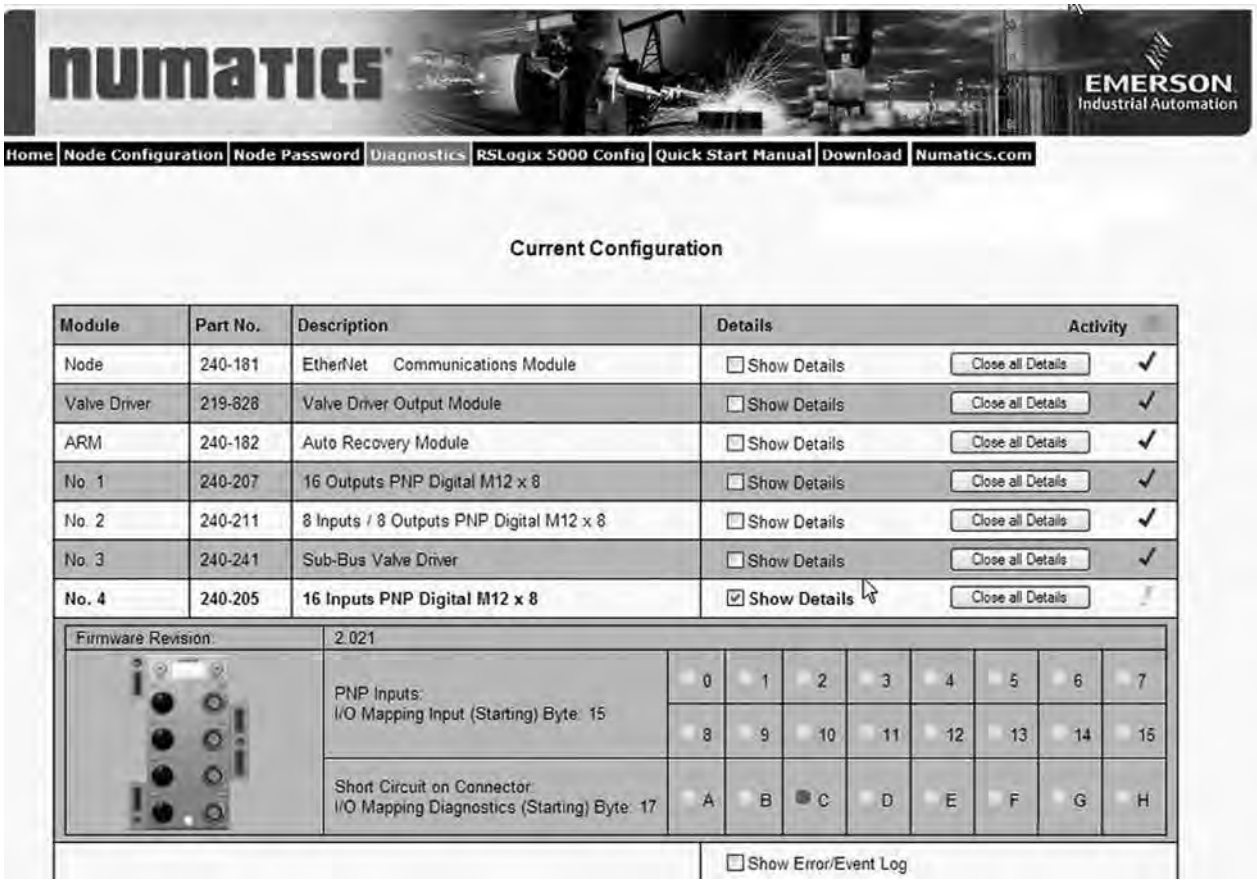
Weight	
PROFINET™ Communications Module	227 g

Certification
II 3G Ex ec IIC T4 Gc (ATEX, IECEx, EACEx for 501 and 502 / ATEX, IECEx, EACEx, Class 1 Div 2 for 502)

Accessories for PROFINET™

Accessory	Description		Catalog number
	M12 Straight 4 Pin Male D-Coded to Male RJ45 Cable - Shielded	5 m	QA0405MK0VA04000
		10 m	QA0410MK0VA04000
	M12 Straight 4 Pin Male D-Coded Field Wireable Connector PG 9 Cable Gland – Screw Terminal		QA04F20000000000
	5 pin straight female cable connector 7/8”		MC05F90000000000
	5 pin elbow female cable connector 7/8”		MD05F20000000000
	5 pin elbow female cable connector 7/8” with 10 m cable Euro colour code	male view 	MD0510MAG0000000

Server web page



Ethernet POWERLINK®

Ethernet POWERLINK® is a open fieldbus protocol designed by B&R for communication between automation control systems and distributed I/O at the device level.

Aventics' G3 Ethernet POWERLINK® nodes have an integrated graphic display and are capable of addressing combinations of up to 1200 outputs and 1200 inputs.

The G3 Ethernet POWERLINK® nodes have been designed and tested to conform to the Ethernet POWERLINK® specifications available at EPSG group (Ethernet Powerlink® Standardization Group). The certification process ensures interoperability for all Ethernet POWERLINK® devices and compatibility with B&R systems.

More information regarding Ethernet POWERLINK® can be obtained from the following website: www.ethernet-powerlink.org

Description	Replacement Part Number
Ethernet POWERLINK® communications module (node)	**240-342**

Ethernet POWERLINK® COMM

FEMALE

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

POWER

MALE

Pin 1 = 0 V DC (valves & outputs)
Pin 2 = 0 V DC (node & inputs)
Pin 3 = Earth Ground
Pin 4 = +24 V DC (node & inputs)
Pin 5 = +24V DC (valves & outputs)

Technical Data

Electrical Data	Voltage	Current
Node Power at Max. Brightness	24 V DC +/- 10%	0.0955 A
Valves & Discrete I/O	24 V DC +/- 10%	8 A maximum
Power Connector	Single key 5 pin 7/8" MINI type (male)	
Communication Connector	Two D-coded 4 pin M12 type (female)	
LEDs	Module Status, Network Status and Activity/Link	

Operating Data	
Temperature Range (ambient)	-20°C to +50°C (Electronics only)
Humidity	95% relative humidity, non-condensing
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6
Moisture Protection	IP65, IP67 (with appropriate assembly and termination)

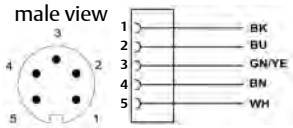
Configuration Data	
Graphic Display	Display used for setting Node Address, Baud Rate, Fault/Idle Actions, and all other system settings.
Maximum Valve-Solenoid Outputs	128 (Series 501), 80 (Series 502)
Maximum Addressable I/O Points	Various combinations of 1200 outputs and 1200 inputs

Network Data	
Supported Baud Rates	10 Mbit/100 Mbit
Communication Connector	Two D-coded 4 Pin M12 type (2-Female)
Diagnostics	Power, short, open load conditions and module health are monitored
Special Features	Integrated web server, Integrated 2 port switch and fail-safe device settings

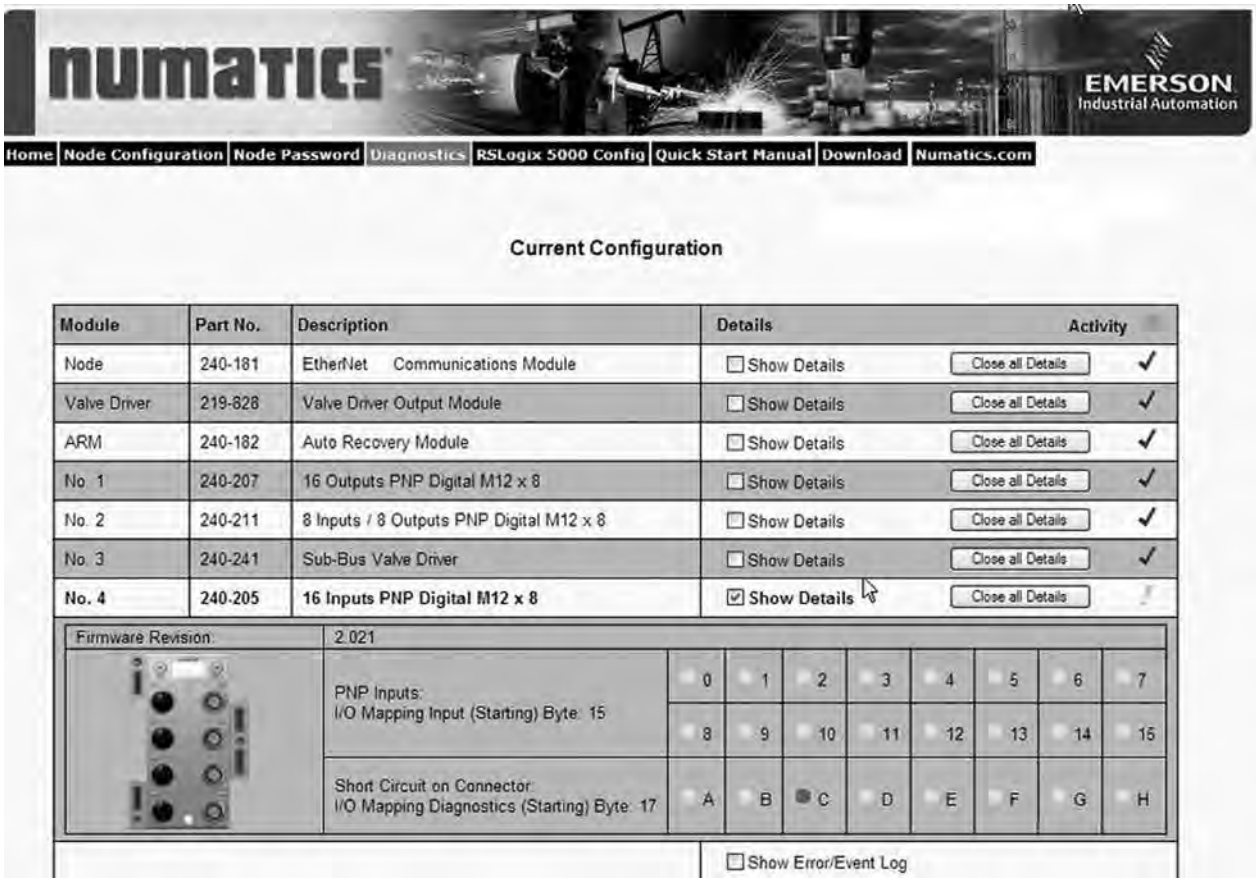
Weight	
Ethernet POWERLINK® Communications Module	227 g

Certification
II 3G Ex ec IIC T4 Gc (ATEX, IECEx, EACEx for 501 and 502 / ATEX, IECEx, EACEx, Class 1 Div 2 for 502)

Accessories for Ethernet POWERLINK®

Accessory	Description		Catalog number
	M12 Straight 4 Pin Male D-Coded to Male RJ45 Cable - Shielded	5m	QA0405MK0VA04000
		10m	QA0410MK0VA04000
	M12 Straight 4 Pin Male D-Coded Field Wireable Connector PG 9 Cable Gland – Screw Terminal		QA04F20000000000
	5 pin straight female cable connector 7/8”		MC05F90000000000
	5 pin elbow female cable connector 7/8”		MD05F20000000000
	5 pin elbow female cable connector 7/8” with 10 m cable Euro colour code	male view 	MD0510MAG0000000

Server web page

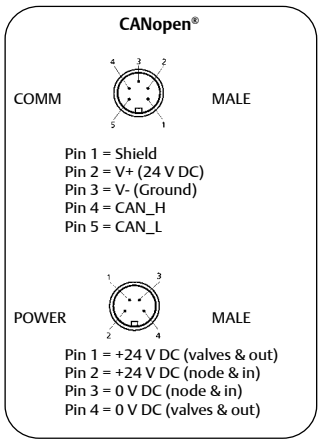


CANopen®

CANopen® is an open protocol based on Controller Area Network (CAN). It was designed for motion oriented machine control networks but has migrated to various industrial applications. CAN in Automation (CIA) is the international users' and manufacturers' organization that develops and supports CAN-based protocols. Aventics' G3 CANopen® nodes have an integrated graphic display and are capable of addressing combinations of up to 256 outputs and 256 inputs.

More information regarding this organization can be found at: www.can-cia.org

Description	Replacement Part Number
CANopen® communications module (node)	**240-336**



Technical Data

Electrical Data	Voltage	Current
Node Power at Max. Brightness	24 V DC +/- 10%	0.0404 A
BUS Power	11-25 V DC	0.025 A
Valves & Discrete I/O	24 V DC +/- 10%	8 A maximum
Power Connector	Single key 4 pin 7/8" MINI type (male)	
Communication Connector	Single key 5 pin 7/8" MINI type (male)	
LEDs	Module Status and Network Status	

Operating Data	
Temperature Range (ambient)	-20°C to +50°C (Electronics only)
Humidity	95% relative humidity, non-condensing
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6
Moisture Protection	IP65, IP67 (with appropriate assembly and termination)

Configuration Data	
Graphic Display	Display used for setting Node Address, Baud Rate, Fault/Idle Actions, and all other system settings.
Maximum Valve-Solenoid Outputs	32 (Series 501), 32 (Series 502)
Maximum Addressable I/O Points	Various combinations of 256 outputs and 256 inputs

Network Data	
Supported Baud Rates	125K Baud, 250K Baud, 500K Baud, 1M Baud
Communication Connector	Single key 5 pin 7/8" MINI type (male)
Diagnostics	Power, short, open load conditions and module health are monitored and fail-safe device settings

Weight	
CANopen® Communications Module	252 g

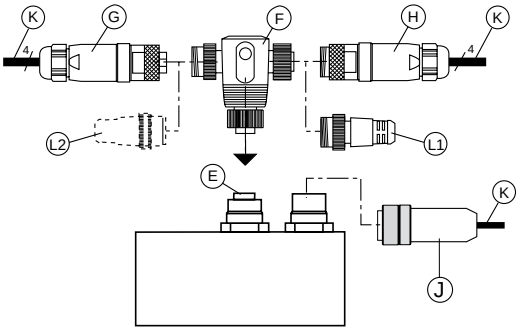
Certification
II 3G Ex ec IIC T4 Gc (ATEX, IECEx, EACEx for 501 and 502 / ATEX, IECEx, EACEx, Class 1 Div 2 for 502)

CANopen® bus connection

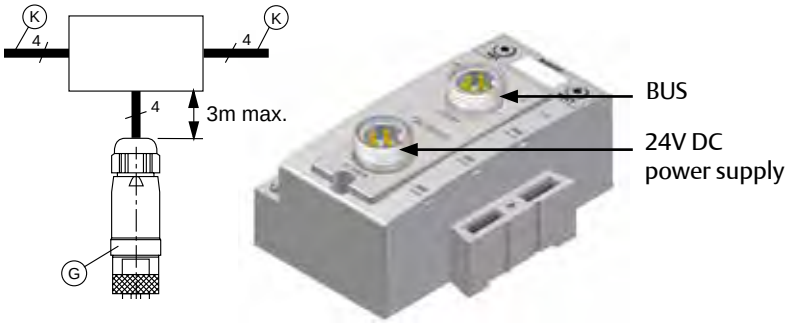
The front panel of the communication module for CANopen® is equipped with:
- a 4 pin male 7/8" socket for power supply
- a 5 pin male 7/8" socket for the bus cable (E)

The bus can be connected in the two following ways:
• directly to the module with a T-connector,
• with a straight connector, cable (max. length: 3 m) and a DeviceNet distributor box.
The modules on either side of the system must be provided with terminating resistors (L1 or L2).

▪ Wiring with T-connector

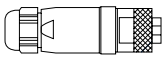
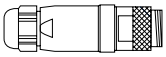
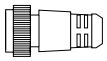
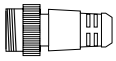
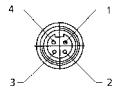


▪ Connection with distributor box



Accessories for CANopen®

The modules on either side of the system must be provided with terminating resistors (H)

	Accessory	Description	Catalog number
G		5 pin straight 7/8-16 UN female network connector	**88161930**
H		5 pin straight 7/8-16 UN male network connector	**88161931**
F		T-connector 7/8-16 UN, 5 male / female / female pins	**88161932**
L1		Terminating resistor female plug 120 ohms	**88161933**
L2		Terminating resistor male plug 120 ohms	**88161934**
J		4 pin straight female cable connector 7/8", supply 24 V DC	**230-1003**
		4 pin elbow female cable connector 7/8", supply 24 V DC	**230-1001**
		4 pin elbow female cable connector 7/8" with 9.15 m cable, supply 24 V DC  1 = brown 2 = white 3 = blue 4 = black	**230-950**

(K) Cable to be ordered separately.

EtherNet/IP™ DLR

EtherNet/IP™ used throughout the world to network millions of PCs has now evolved into a viable industry network. EtherNet/IP™ is an open architecture high-level communication network that meets the demands of today's industrial applications requiring high-speed (10/100 Mbit/s), high-throughput and flexibility. Additionally, EtherNet/IP™ technology can integrate an on-board web server, which can make the node readily accessible for configuration, testing and even retrieval of technical documentation.

Aventics' G3 EtherNet/IP™ DLR (Device Level Ring) node with integrated display has an embedded switch which allows the unit to be used in simplified networks with linear topology configurations (daisy chain). This technology alleviates the need for an external Ethernet switch device in a single subnet configuration. Additionally, the DLR compatibility allows the node to be used in a fault tolerant "ring" network, when using appropriate EtherNet/IP™ DLR scanners. DLR configuration allows communication recovery from a single point failure on the network ring (e.g. failed network connection or cable).

Aventics' G3 EtherNet/IP™ nodes are capable of addressing combinations of up to 1200 outputs and 1200 inputs.

The G3 EtherNet/IP™ nodes have been tested and approved for conformance by the ODVA.

More information about Ethernet/IP™ and the ODVA can be obtained from the following website: www.odva.org.

Description	Replacement Part Number
EtherNet/IP™ DLR communications module (node)	**240-340**

Ethernet/IP™ DLR

COMM  FEMALE

Pin 1 = TX+
Pin 2 = RX+
Pin 3 = TX-
Pin 4 = RX-

POWER  MALE

Pin 1 = +24 V DC (valves & out)
Pin 2 = +24 V DC (node & in)
Pin 3 = 0 V DC (node & in)
Pin 4 = 0 V DC (valves & out)

Technical Data

Electrical Data	Voltage	Current
Node Power at Max. Brightness	24 V DC +/- 10%	0.0953 A
Valves and Discrete I/O	24 V DC +/- 10%	8 A Maximum
Power Connector	Single key 4 pin 7/8" MINI type (male)	
Communication Connector	Two D-coded 4 pin M12 type (female)	
LEDs	Module Status, Network Status and Activity / Link	

Operating Data	
Temperature Range	-20°C to +50°C (Electronics only)
Humidity	95% relative humidity, non-condensing
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6
Moisture	IP65, IP67 (with appropriate assembly and termination)

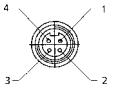
Configuration Data	
Graphic Display	Display used for setting IP address, Subnet Mask, Fault/Idle Actions, and all other system settings
Maximum Valve Solenoid Outputs	128 (501 Series), 80 (502 Series)
Maximum Sub-Bus I/O Points	Various combinations of 1200 outputs and 1200 inputs

Network Data	
Supported Baud Rates	10 Mbit / 100 Mbit
Communication Connector	Two D-coded 4 pin M12 type (female)
Diagnostics	Power, short, open load conditions and module health and configuration are monitored
Special Features	Embedded two port switch, Device Level Ring (DLR) compatibility, Linear network topology, QuickConnect™ capability, fail-safe device settings, integrated web server, HTTP, TFTP, UNICAST

Weight	
EtherNet/IP™ DLR Communications module	227 g

Certification
II 3G Ex ec IIC T4 Gc (ATEX, IECEx, EACEx for 501 and 502 / ATEX, IECEx, EACEx, Class 1 Div 2 for 502)

Accessories for EtherNet/IT™ DLR

Accessory	Description		Catalog number
	M12 Straight 4 Pin Male D-Coded to Male RJ45 Cable - Shielded	5 m	QA0405MK0VA04000
		10 m	QA0410MK0VA04000
	M12 Straight 4 Pin Male D-Coded Field Wireable Connector PG 9 Cable Gland – Screw Terminal		QA04F20000000000
	4 pin straight female cable connector 7/8”		230-1003
	4 pin elbow female cable connector 7/8”		230-1001
	4 pin elbow female cable connector 7/8” with 9.15 m cable	 1 = brown 2 = white 3 = blue 4 = black	230-950

EtherCAT®

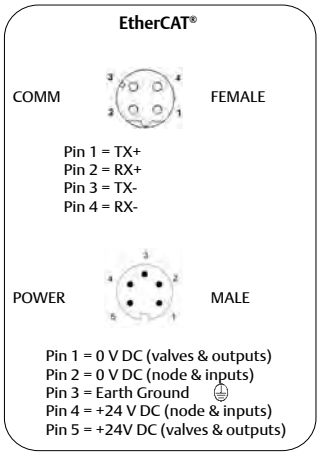
EtherCAT® is an open ethernet based fieldbus protocol developed by Beckhoff. EtherCAT® sets new standards for real-time performance and topology flexibility with short data update/ cycle times and low communication jitter.

Aventics' G3 EtherCAT® node has an integrated graphic display for simplified commissioning and diagnostics. It is capable of addressing combinations of up to 1200 outputs and 1200 inputs.

The G3 nodes for EtherCAT® have been designed and tested to conform with EtherCAT® specifications set forth by the ETG.

More information regarding EtherCAT® can be obtained from the following website: www.ethercat.org.

Description	Replacement Part Number
EtherCAT® communications module	**240-339**



Technical Data

Electrical Data	Voltage	Current
Node Power at Max. Brightness	24 V DC +/- 10%	0.073 A
Valves and Discrete I/O	24 V DC +/- 10%	8 A Maximum
Power Connector	Single key 5 pin 7/8" MINI type (male)	
Communication Connector	Two D-coded 4 pin M12 type (female)	
LEDs	Module Status, Network Status and Activity /Link	

Operating Data	
Temperature Range	-20°C to +50°C (Electronics only)
Humidity	95% relative humidity, non-condensing
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6
Moisture	IP65, IP67 (with appropriate assembly and termination)

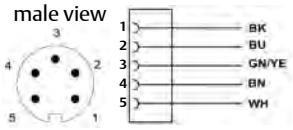
Configuration Data	
Graphic Display	Display used for setting IP address, Subnet Mask, Fault/Idle Actions, and all other system settings
Maximum Valve Solenoid Outputs	128 (Series 501), 80 (Series 502)
Maximum Sub-Bus I/O Points	Various combinations of 1200 outputs and 1200 inputs

Network Data	
Supported Baud Rates	10 Mbit / 100 Mbit
Bus Connector	Two D-coded 4 pin M12 type (female)
Diagnostics	Power, short, open load conditions and module health and configuration are monitored.
Special Features	Integrated web server, fail-safe device settings

Weight	
EtherCAT® Communications module	227 g

Certification
II 3G Ex ec IIC T4 Gc (ATEX, IECEx, EACEx for 501 and 502 / ATEX, IECEx, EACEx, Class 1 Div 2 for 502)

Accessories for EtherCAT®

Accessory	Description		Catalog number
	M12 Straight 4 Pin Male D-Coded to Male RJ45 Cable - Shielded supply 24 V DC	5m	QA0405MK0VA04000
		10m	QA0410MK0VA04000
	M12 Straight 4 Pin Male D-Coded Field Wireable Connector PG 9 Cable Gland – Screw Terminal		QA04F20000000000
	5 pin straight female cable connector 7/8", supply 24 V DC		MC05F90000000000
	5 pin elbow female cable connector 7/8", supply 24 V DC		MD05F20000000000
	5 pin elbow female cable connector 7/8" with 10 m cable Euro colour code supply 24 V DC	male view 	MD0510MAG0000000

01451GB-2022/R01
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Input modules are compatible with sensors and apparatus installed in zone 2, protection types d, m and nA

Input Modules M12

with integrated short circuit protection

Digital Input 5-pin M12 Modules

		Description	Part Number		
Ex	I/O type	Signal Type	PNP	NPN	NAMUR
d, m, nA	Inputs	8 Inputs	**240-346**	**240-348**	-
		16 Inputs	**240-345**	**240-347**	-

Analog Input (16 bit resolution)

5-pin M12 Modules

		Description	Part Number	
Ex	I/O type	Signal Type	0-10 V DC	4-20 mA
d, m, nA	Analog Input	4 Inputs	**240-349**	**240-350**

Digital Inputs -Terminal Strip Modules

with integrated short circuit protection

Digital Inputs -Terminal Strip Modules

		Description	Part Number		
Ex	I/O type	Signal Type	PNP	NPN	NAMUR
d, m, nA	Inputs	16 Inputs	**240-343**	**240-344**	-

Technical Data

Operating Data	5-pin M12 Modules	Terminal Strip Modules
Temperature Range (ambient)	-20°C to +50°C (Electronics only)	
Humidity	95% relative humidity, non-condensing	
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6	
Wire Range	-	12 to 24 AWG
Strip Length	-	7 mm
Tightening Torque	-	0.5 Nm
Ingress Protection	IP65, IP67 (with appropriate assembly and termination)	IP20

Weight	
Module Inputs - Analog	244 g
Module Inputs - Digital	274 g

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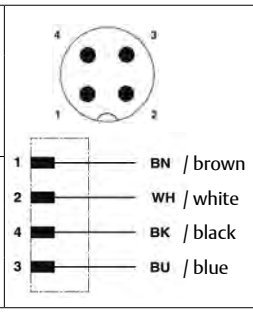
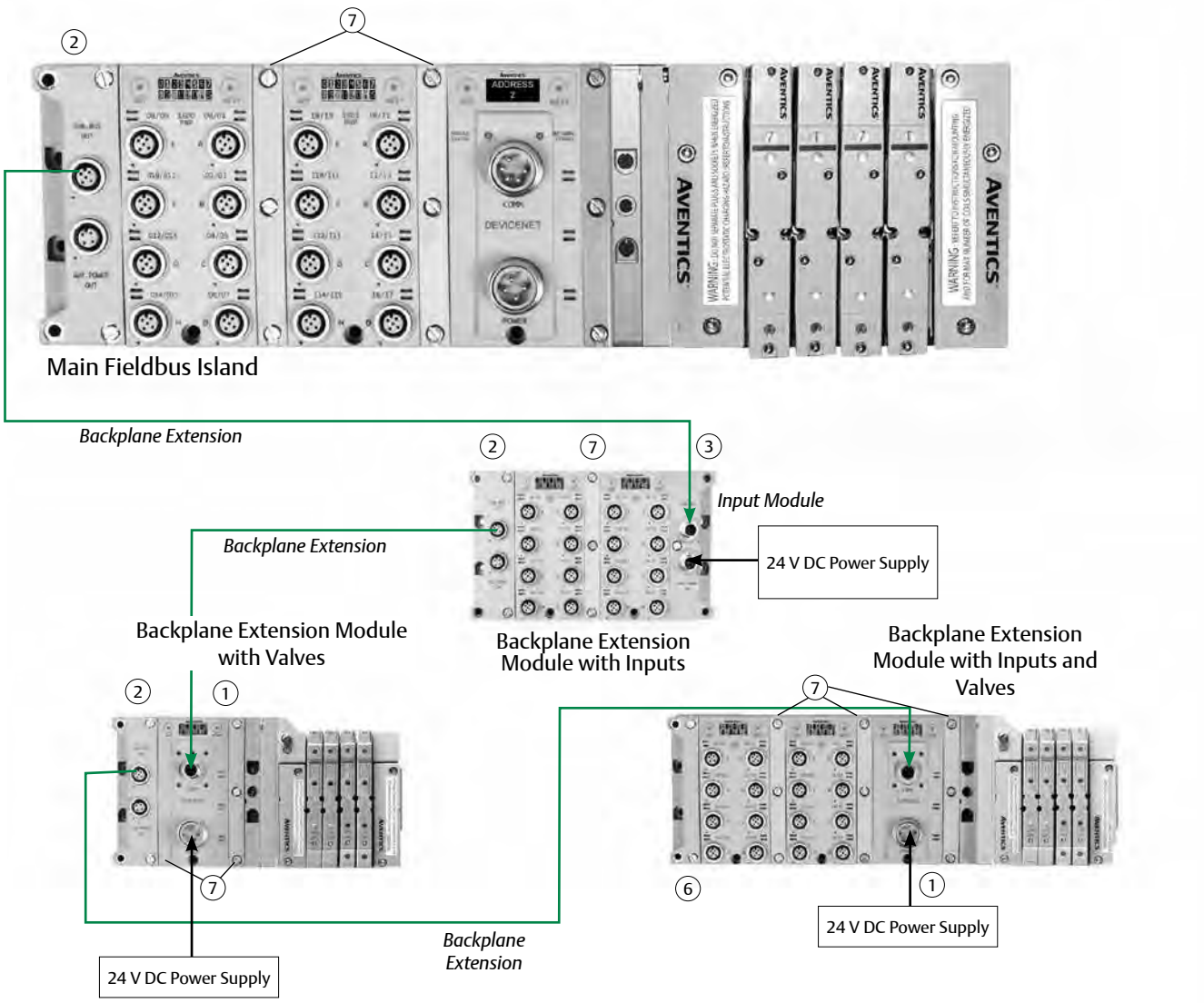
Accessory	Description			Catalog number
	5 pin straight male M12 connector			88100330
	5 pin elbow male M12 connector			88161927
	Dust Cover - M12 Male			230-647
	5 pin male DUO M12 connector for 2 inputs (2 cables, Ø3-5 mm)			88100253
	M12 SPEEDCON connector Straight 4 Pin Male Single Ended Cable, Euro Colour Code		1.5 m	TA04E5MIE000071P
			3 m	TA0403MIE000071P
			5 m	TA0405MIE000071P
	M12 SPEEDCON connector 90° 4 Pin Male Single Ended Cable, Euro Colour Code		1.5 m	TB04E5MIE000071P
			3 m	TB0403MIE000071P
			5 m	TB0405MIE000071P
	Replacement terminal strip		I/O 0-7	140-1073
			I/O 8-15	140-1074
-	Keying element for terminal strip			140-1076

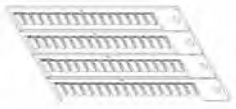
G3 Platform Distribution Options

Easy, Cost Effective Solutions for Digital Inputs and Valve Automation using G3 Electronics

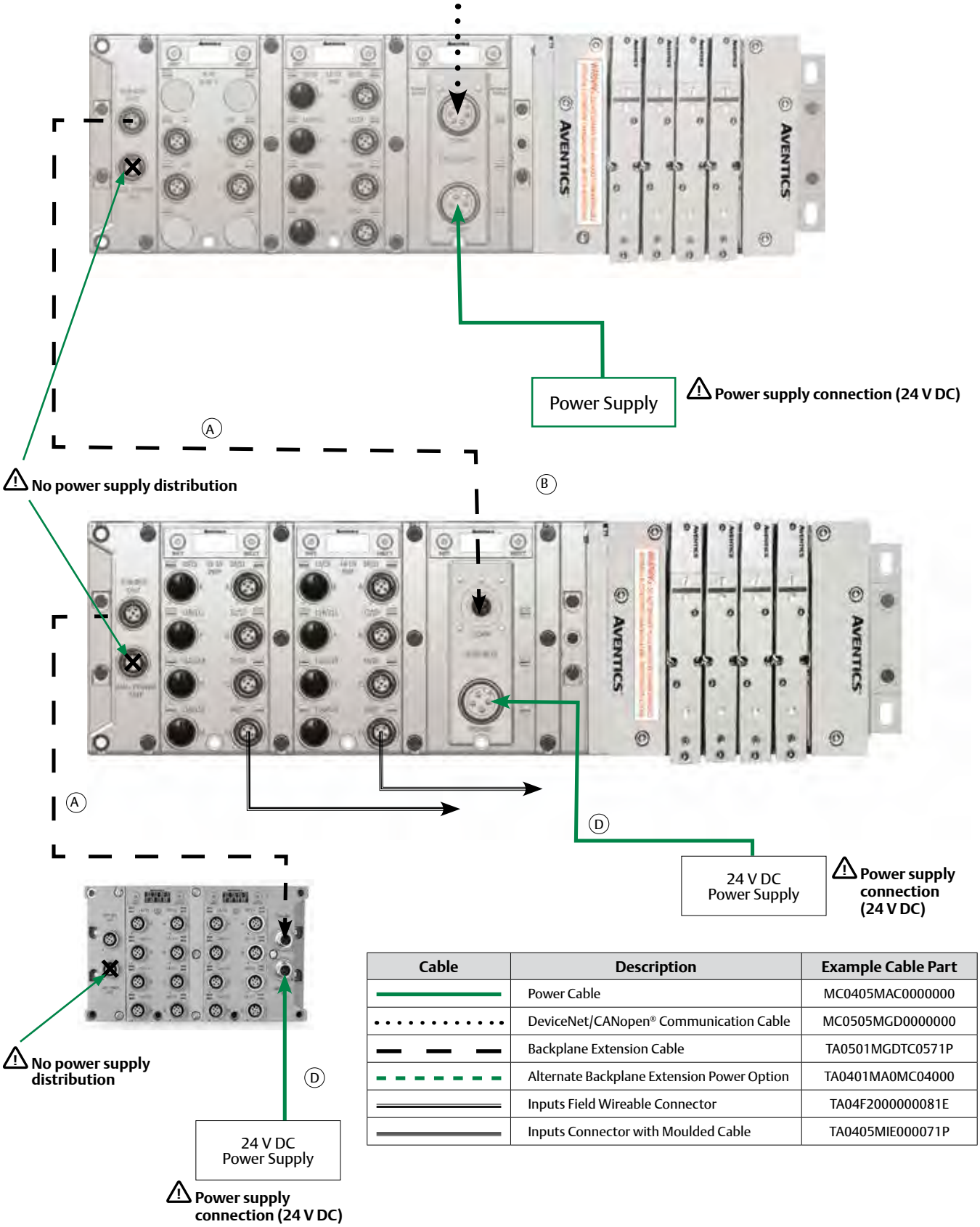


- Unique distribution system allows system efficiency by allowing the same modules to be used in either centralised or distributed applications
- Distribution options include:
  Inputs
  Valves with Inputs
  Valves Only

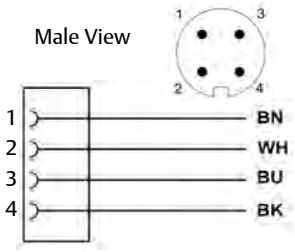
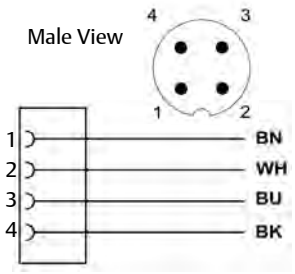
⚠ **Each distributed modules must have its own power supply connection (24 V DC).**

N°	Accessory	Description		Weight	Catalog number
Backplane Extension Modules					
①		Distributed Valve Module	Distributed module for valves with display	235g	**240-335**
②		G3 Backplane extension Left End Module	G3 Left End Module for backplane distribution and 24 V DC to Inputs modules	with DIN Rail Clips	141g	**240-244**
				W/o clips	130g	**240-183**
③		G3 Backplane extension Right Module	G3 Right Module allowing the connection of distributed Inputs modules	with DIN Rail Clips	141g	**240-246**
				W/o clips	130g	**240-185**
Miscellaneous Modules					
⑥		G3 Left Terminator Module	Must be installed after the last Input module or after the communication module if there are no Inputs modules installed.	With DIN Rail Clips	102g	**240-245**
				W/o clips	91g	**240-184**
⑦		Jumper Clip	Provides electrical connections between modules		45g	**240-179**
⑨		Right Hand Mounting Cover	Used when a communication module is used without local valves installed	With DIN Rail Clips	-	**240-289**
				W/o clips	-	**240-255**
⑩		Valve Driver Module	G3 electrical interface to pneumatics ends and valves	W/o clips	136 g	**219-907**
Accessories					
-		Labels	For use with Murrplastik© Type 20 Software		-	**122-1251**
-		M12 Dust Cover	Protects the connector against dust	Male	-	**230-647**
				Female	-	**88157773**

Example Backplane Extension Layout and Cabling (DeviceNet™ Network)

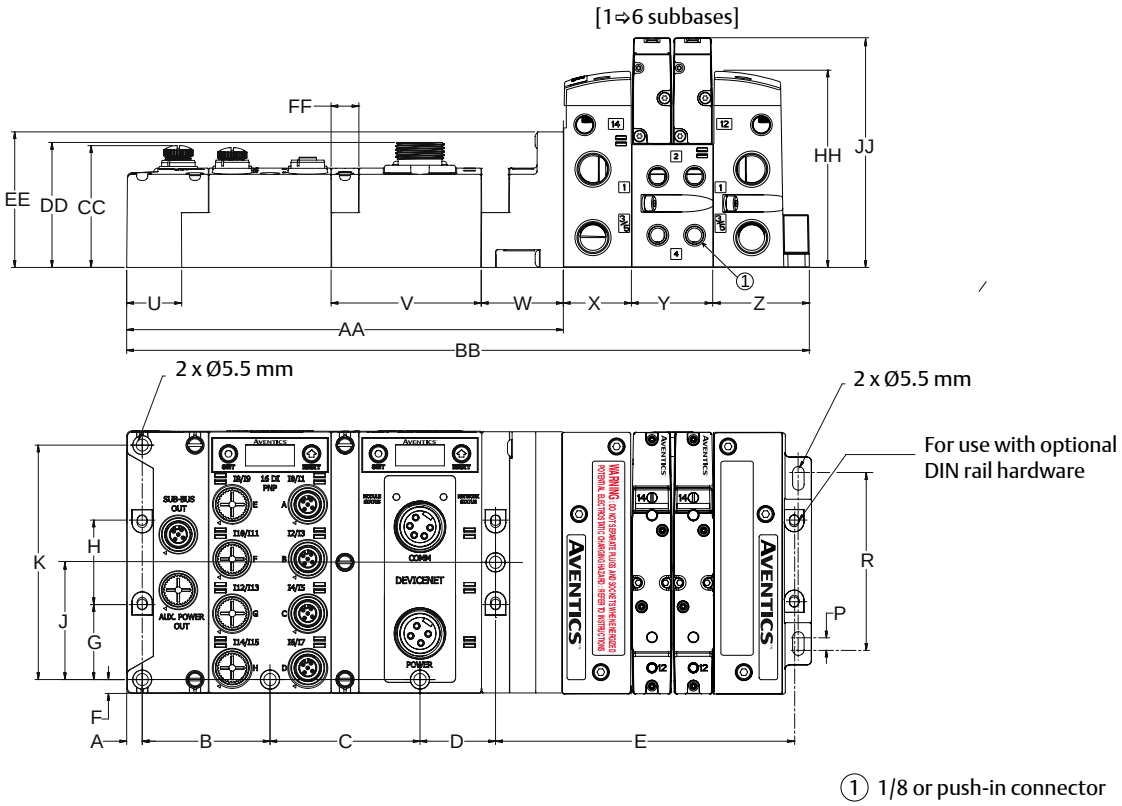


Cable	Description	Example Cable Part
	Power Cable	MC0405MAC0000000
	DeviceNet/CANopen® Communication Cable	MC0505MGD0000000
	Backplane Extension Cable	TA0501MGDTC0571P
	Alternate Backplane Extension Power Option	TA0401MA0MC04000
	Inputs Field Wireable Connector	TA04F2000000081E
	Inputs Connector with Moulded Cable	TA0405MIE000071P

N°	Accessories	Description			Part Number
M12 Backplane extension cables with SPEEDCON connector technology					
Ⓐ		M12 Straight 5 Pin Male to Female SPEEDCON Backplane Extension Cable – Shielded (backplane extension)		1m	**TA0501MGDTC0571P**
				5m	**TA0505MGDTC0571P**
				10m	**TA0510MGDTC0571P**
7/8" MINI 4 Pin Cables & Connectors for Backplane Extension Valve Module Power					
Ⓑ		7/8" MINI Straight 4 Pin Female Single Ended Cable, Euro Colour Code		5m	**MC0405MAC0000000**
				10m	**MC0410MAC0000000**
		7/8" MINI 90° 4 Pin Female Single Ended Cable, Euro Colour Code		5m	**MD0405MAC0000000**
				10m	**MD0410MAC0000000**
		7/8" MINI Straight 4 Pin Female Field Wireable Connector –Cable Gland – One size fits all			**230-1003**
		7/8" MINI 90° 4 Pin Female Field Wireable Connector – PG 9 Cable Gland			**230-1001**
M12 4 Pin Cables for Backplane Extension In/Out Module Power					
Ⓓ		M12 Cables for Backplane extension Power M12 Straight 4 Pin Female Single Ended Cable, Euro Colour Code		5m	**TC0405MAE0000000**
				10m	**TC0410MAE0000000**
		M12 Cables for Backplane extension Power M12 90° 4 Pin Female Single Ended Cable, Euro Colour Code		5m	**TD0405MAE0000000**
				10m	**TD0410MAE0000000**

Dimensions (mm) - G3 Fieldbus Manifold Assembly

Series 502 Valve System Assembly with G3 Electronics and Backplane Extension

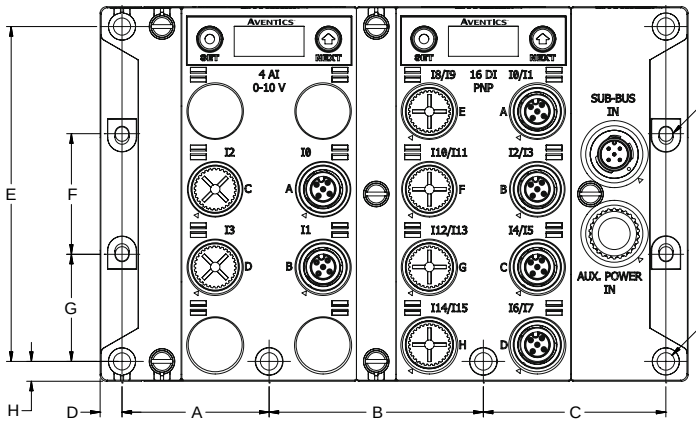


A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S
7.0	57.5	67.5	46.5	118.8	6.3	33.8	38.0	52.8	105.5	119.1	7.3	83.8	5.6	81.4	131.4

T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	HH	JJ
32.3	24.8	67.5	36.9	31.8	36.0	45.0	196.6	304.6	54.0	56.3	61.0	12.5	91.5	107.3

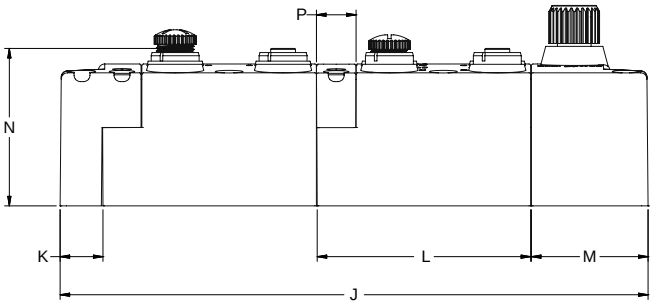
Dimensions (mm) - G3 Fieldbus Inputs Assembly

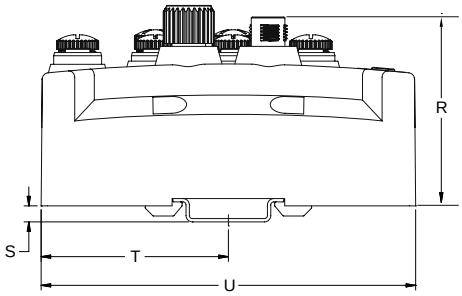
Inputs Assembly with G3 Electronics and Backplane Extension Input



For use with optional DIN rail hardware

Additional mounting holes (4) for use with M5 screw





View shown with optional DIN rail hardware and 25 mm DIN rail

A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U
46.4	67.5	57.6	7.0	105.5	38.0	33.7	6.25	185.3	13.5	67.5	37	54.0	12.5	62.5	5.1	59.0	118.0

How to Order
G3 Electronics

G3 ED1 00 D 0 71W

Electronics Protocols

DN1	=	DeviceNet™
ED1	=	EtherNET/IP™ DLR
EM1	=	ModBus® TCP/IP
PT1	=	PROFIBUS™ DP
PN1	=	PROFINET®
DS2	=	Backplane extension Valve Manifold
DS3	=	Backplane extension I/O Assembly
CO1	=	CANopen®
EC1	=	EtherCAT®
PL1	=	Ethernet POWERLINK®
CC1	=	CC-Link IE Field

Number of I/O Modules

00	=	0
01	=	1
02	=	2
03	=	3
04	=	4
05	=	5
06	=	6
07	=	7
08	=	8

Ex:
⚠ 8 modules max. per bloc.

Left Mounting

D	=	w/ Backplane extension Out
H	=	w/ Terminating Resistor

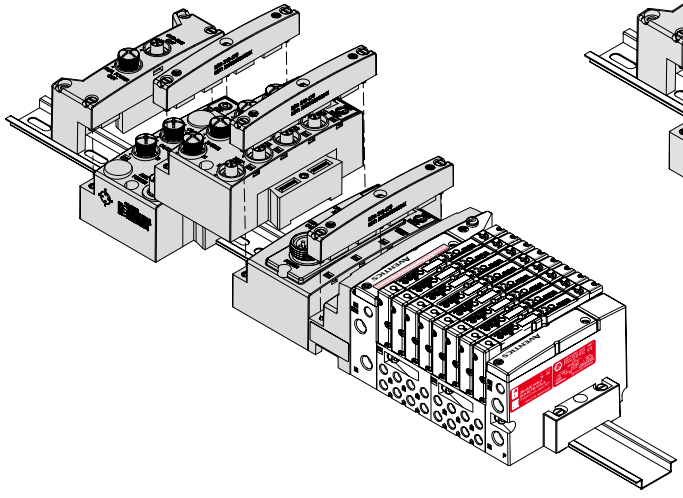
Options

71W	=	Version ATEX
D45	=	71W + DRM-DIN Rail Mounting
D46	=	71W + E23-Fieldbus assembly without valves
F20	=	71W + E23-Fieldbus assembly without valves + DRM-DIN Rail Mounting

⚠ **ARM** = No usable for Ex

Modification

0	=	Initial release



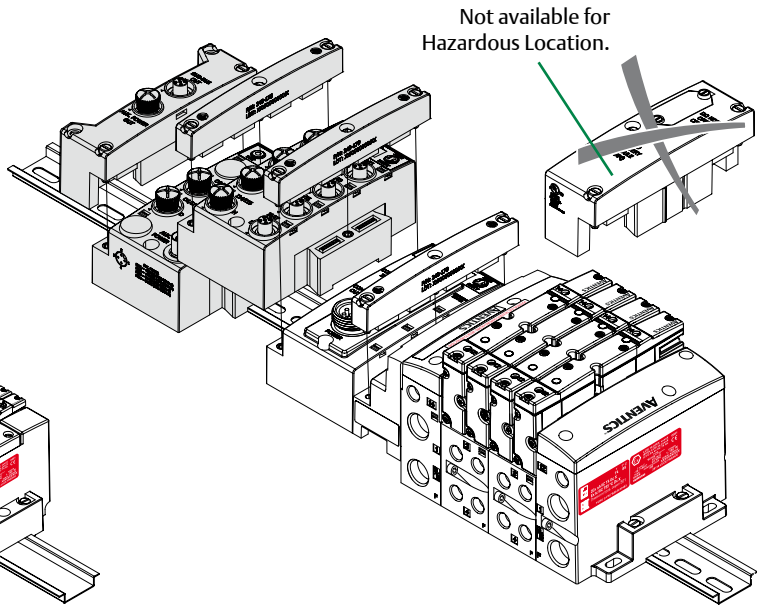


Table of Contents

580 Electronics

580 Fieldbus - Electronics Made Easy!

Innovative Graphic Display is used for easy commissioning, visual status & diagnostics

Commissioning Capabilities

- Set network address (including IP & Subnet mask for Ethernet)
- Set baud rate
- Set factory defaults

Visual Diagnostics

- Shorted and open load detection
- Shorted sensor/cable detection
- Low & missing power detection
- Self-tests activation
- Log of network errors

Graphic Display for configuration & diagnostics

Compact Electronic Module

580 Fieldbus Communications Electronics

Why use Aventics Fieldbus communication electronics?

Modular Reality...

- No internal wiring simplifies assembly
- Power connector allows output power to be removed while inputs and communication are left active
- IP65 protection
- Ex certification: **II 3G Ex ec IIC T4 Gc**

	max. coils	
	501	**502**
580	128 (1)/ 32 (2)	80 (1)/ 32 (2)
580 CHARMs	48	32

(1) PROFIBUS-DP®, PROFINET®, EtherNET/IP™ DLR
(2) DeviceNet™, IO-Link Class A, IO-Link Class B

26.4 V max. / 6.9 V max. CHARM

Supported Protocols

- DeviceNet™
- PROFIBUS™ DP
- PROFINET®
- EtherNET/IP™ DLR
- IO-Link® (Class A & Class B)
- CHARMs

CE

01444GB-2022/R01

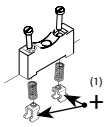
DeviceNet™

DeviceNet™ is an open bus fieldbus communication system developed by Allen-Bradley based on Controller Area Network (CAN) technology. The governing body for DeviceNet™ is the Open DeviceNet™ Vendors Association (ODVA). The ODVA controls the DeviceNet™ specification and oversees product conformance testing.

Aventics' 580 nodes for DeviceNet™ have an integrated graphic display.

They have been tested and approved for conformance by the ODVA.

More information about DeviceNet™ and the ODVA can be obtained from the following WEB site:
www.odva.org



Description	Replacement Part Number
DeviceNet™ communications module (node)	P580AEDN101071W
	P580AEDN1010D45 (1)

DeviceNet™

COMMUNICATION MALE

Pin 1 = Shield
Pin 2 = V+ (24 V DC)
Pin 3 = V- (Ground)
Pin 4 = CAN_H
Pin 5 = CAN_L

POWER MALE

Pin 1 = +24 V DC (node)
Pin 2 = +24 V DC (Valves)
Pin 3 = 0 V DC (node)
Pin 4 = 0 V DC (Valves)

Technical Data

Electrical Data	Rated Voltage	Current
Node Power	24 VDC (2)	0.05 A
BUS Power	11-25 VDC	0.05 A
Valves	24 VDC +/- 10%	4 A Maximum
Power Connector	A-Coded 4 Pin M12 (male)	
Communication Connector	A-Coded 5 Pin M12 (male)	
LEDs	Module Status and Network Status	

Operating Data	
Temperature Range (ambient)	-10ºC to +50ºC
Humidity	95% relative humidity, non-condensing
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6
Moisture Protection	IP65

Configuration Data	
Graphic Display	Display used for setting IP Address, Subnet mask, Fault/Idle Actions, DHCP/BootP and all other system settings.
Maximum Valve-Solenoid Outputs	32 (Series 501/502)

Network Data	
Supported Baud Rates	125K Baud, 250K Baud, 500K Baud, with Auto-Baud detection
Supported Connection Type	Polled, Cyclic, Change of State (COS) and combination Message Capability
Communication Connector	A-Coded 5 Pin M12 (male)
Diagnostics	Power, short, open load conditions are monitored
Special Features	Supports Auto-Device Replacement (ADR) and fail-safe device settings

Weight	
DeviceNet™ Communication Module	320 g

Certification
II 3G Ex ec IIC T4 Gc

(2) Voltage supply tolerance +/- 10%

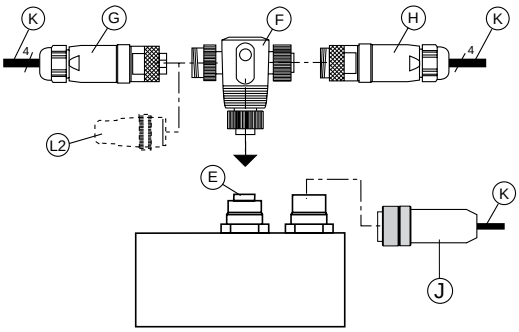
DeviceNet™ bus connection

the front panel of the communication module for DeviceNet™ is equipped with a 5 pin 7/8 - 16 UN male socket (E).

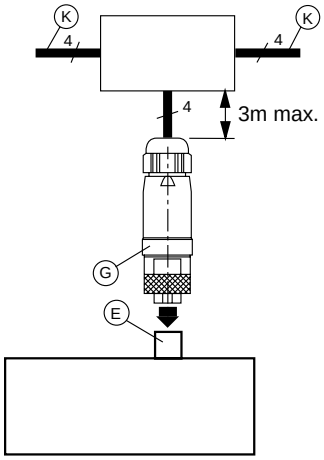
The bus can be connected in the two following ways:
- directly to the module with a T-connector;
- with a straight connector, cable (max. length: 3 m) and a DeviceNet distributor box.

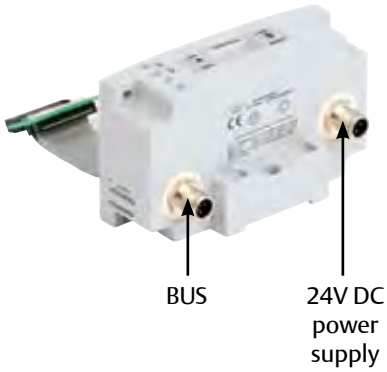
The modules on either side of the system must be provided with terminating resistors (L1 or L2).

■ Wiring with T-connector



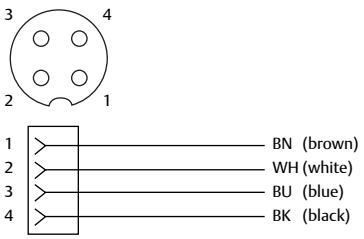
■ Connection with DeviceNet™ distributor box (X)





Accessories for DeviceNet™

The modules on either side of the system must be provided with terminating resistors (H)

	Accessory	Description	Catalog number
G		M12 90° 5 Pin Female Field Wireable network Connector – Spring Cage (A coded) PG9 cable gland	**TD05F2000000071V**
		M12 Straight 5 Pin Female Field Wireable network Connector – Spring Cage PG9 cable gland	**TC05F2000000071V**
H		M12 Straight 5 Pin Male Field Wireable network Connector – Spring Cage PG9 cable gland	**TA05F2000000071V**
F		3 Way M12 "T" (T-connector M12, 5 male / female / female pins)	**TC0500000TT05000**
L2		Terminating resistor male plug	**TA05TR0000000000**
		Terminating resistor female plug	**88157770**
J		M12 90° 4 Pin Female Field Wireable Connector (PG 9 Cable Gland) (4 pin elbow female cable connector 7/8") - 24 V DC power supply	**TD04F20000000000**
		M12 90° 4 Pin Female Single Ended Cable, Euro Color Code (4 pin elbow female cable connector 90° with 10 m cable) 24 V DC power supply 	**TD0410MAE0000000**

(K) Cable to be ordered separately.

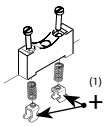
EtherNet/IP™ DLR

EtherNet/IP™ used throughout the world to network millions of PC's has now evolved into a viable industry network. EtherNet/IP is an open architecture high-level communication network that meets the demands of today's industrial applications requiring high-speed (10/100 Mbit/s), high-throughput and flexibility. Additionally, EtherNet/IP™ technology can integrate an on-board Web server, which can make the node readily accessible to any standard Web browser for configuration, testing and even retrieval of technical documentation.

Aventics' 580 EtherNet/IP™ DLR (Device Level Ring) node with integrated display, has an embedded switch which allows the unit to be used in simplified networks with linear topology configurations (daisy chain). Additionally, the DLR compatibility allows the node to be used in a fault tolerant "ring" network, when using appropriate EtherNet/IP™ DLR scanners. DLR configuration allows communication recovery from a single point failure on the network ring (e.g. failed network connection or cable).

The 580 EtherNet/IP™ nodes have been tested and approved for conformance by the ODVA

More information about EtherNet™ and the ODVA can be obtained from the following WEB site:
Open Device Vendors Association (ODVA)
www.odva.org



Description	Replacement Part Number
EtherNet/IP™ DLR Communications Module (node)	P580AEED101071W
	P580AEED1010D45 (1)

Ethernet/IP™ DLR

COMMUNICATION
FEMALE

Pin 1 = TX+
Pin 2 = RX+
Pin 3 = TX-
Pin 4 = RX-

POWER
MALE

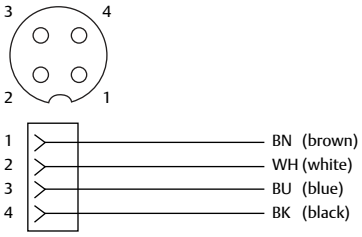
Pin 1 = +24 V DC (node)
Pin 2 = +24 V DC (Valves)
Pin 3 = 0 V DC (node)
Pin 4 = 0 V DC (Valves)

Technical Data

Electrical Data	Rated Voltage	Current
Node Power	24 VDC (2)	0.09 A Maximum
Valves	24 VDC (2)	4 A Maximun
Power Connector	A-Coded 4 Pin M12 (male)	
Communication Connector	Two D-coded 4 Pin M12 (female)	
LEDs	Module Status, Network Status and Activity/Link	
Operating Data		
Temperature Range	-10ºC to +50ºC	
Humidity	95% relative humidity, non-condensing	
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6	
Moisture	IP65	
Configuration Data		
Graphic Display	Display used for setting IP address, Subnet Mask, Fault/Idle Actions, and all other system settings	
Maximum Valve Solenoid Outputs	128 (Series 501) / 80 (Series 502)	
Network Data		
Supported Baud Rates	10 Mbit / 100 Mbit	
Communication Connector	Two D-coded 4 pin M12 (female)	
Diagnostics	Power, short, open load conditions and module health and configuration are monitored	
Special Features	Embedded two port switch, Device Level Ring (DLR) compatibility, Linear network topology, fail-safe device settings, integrated web server, HTTP, TFTP, UNICAST	
Weight		
EtherNet/IP™ DLR communications module	337 g	
Certification		
II 3G Ex ec IIC T4 Gc		

(2) Voltage supply tolerance +/- 10%

Accessories for EtherNET/IP™ DLR

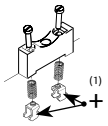
Accessory	Description		Catalog number
	M12 Straight 4 Pin Male D-Coded to Male RJ45 network Cable - Shielded	5 m	QA0405MK0VA04000
		10 m	QA0410MK0VA04000
	M12 elbow 4 Pin Male D-Coded Field Wireable network Connector PG 9 Cable Gland – Screw Terminal		QB04F2000000071N
	M12 90° 4 Pin Female Field Wireable Connector (PG 9 Cable Gland) (4 pin elbow female cable connector 7/8") - 24 V DC power supply		TD04F20000000000
	M12 90° 4 Pin Female Single Ended Cable, Euro Color Code (4 pin elbow female cable connector 90° with 10 m cable) 24 V DC power supply		TD0410MAE0000000

IO-Link® (Class A & Class B)

IO-Link® is a globally standardized IO technology (IEC 61131-9) developed primarily for communication with smart sensors and actuators that can also be used with valves and other field devices. IO-Link® is used to individually link field devices and resides below the I/O level. An IO-Link® Master with a higher level fieldbus or Ethernet communication protocol is required. The IO-Link Consortium, which is a technical committee within PROFIBUS® & PROFINET® International (PI), oversees and manages IO-Link® specifications.

Aventics' IO-Link® communications node offers both event based as well as standard I/O mapped diagnostics, requires minimal commissioning, and is compatible with distributed modular I/O. Supports both Class A (4 pin) and Class B (5 pin) with isolated ground) communication port types.

More information regarding IO-Link® can be obtained from the following website: www.io-link.com



Description	Replacement Part Number
IO-Link® Class A (4 pin) Communications Module (node)	P580AELM101071W
	P580AELM1010D45 (1)
IO-Link® Class B (5 pin) Communications Module (node)	P580AELM201071W
	P580AELM2010D45 (1)

IO-Link® (Class A & Class B)

The IO-Link® (Port Type A) connector is a single keyway 4 pin M12 male connector
Pin 1 = +24 V DC PWR
Pin 2 = +24 V DC (Valves)
Pin 3 = 0 V DC PWR (Valves)
Pin 4 = IO-Link COMM (C/Q)
Pin 5 = NO CONNECT

The IO-Link® (Port Type B) connector is a single keyway 5 pin M12 male connector
Pin 1 = +24 V DC PWR
Pin 2 = +24 V DC (Valves)
Pin 3 = 0 V DC PWR
Pin 4 = IO-Link COMM (C/Q)
Pin 5 = 0 V DC (Valves)

Technical Data

Electrical Data	Rated Voltage	Current
Node Power	24 VDC (2)	0.020 A
Valves	24 VDC (2)	4 A Maximum
Power and Communication Connector	Class A: A-Coded 4 pin M12 (male)/Class B: A-Coded 5 pin M12 with isolated ground (male)	
LEDs	Valve Power, Node Power, Communication	
Operating Data		
Temperature Range (ambient)	-10°C to 50°C	
Humidity	95% Relative Humidity, Non-condensing	
Vibration/Shock	IEC 60068-2-27, IEC 60068-2-6	
Moisture	IP65	
Configuration Data		
Maximum Valve Solenoid Outputs	32 (Series 501/502)	
Network Data		
Supported Baud Rates	38.4K	
Diagnostics	Power, short, open load conditions with both standard I/O mapped diagnostics and event based diagnostics	
Special Features	Fail-safe device settings	
Weight		
IO-Link® Communications Module	Class A: 298 g, Class B: 303 g	
Certification		
II 3G Ex ec IIC T4 Gc		

(2) Voltage supply tolerance +/- 10%

IO Link field wireable

M12 straight 5 pins Female A-Coded IO Link field wireable PG-9 Cable Gland

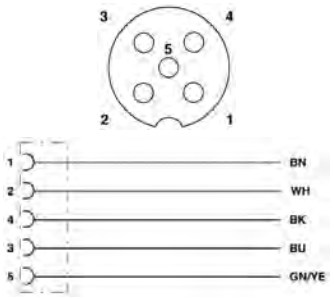
TC05F20000000000

M12 90° Elbow 5 pins Female A-Coded IO Link field wireable PG-9 Cable Gland

TD05F20000000000

Accessories for IO-Link® (Class A & Class B)

Accessory	Description		Catalog number
M12 Class A Compatible Cables			
	M12 Straight 4 Pin Male Single Ended Cable, Euro Color Code	1.5 m	**TA04E5MIE000071P**
		5 m	**TA0405MIE000071P**
	M12 90° 4 Pin Male Single Ended Cable, Euro Color Code	1.5 m	**TB04E5MIE000071P**
		5 m	**TB0405MIE000071P**
	M12 Straight 4 Pin Male to Female Cable Extension	1.5 m	**TC04E5MIETA0471P**
		3 m	**TC0403MIETA0471P**
M12 Class B Compatible Cables			
	M12 Straight 5 Pin Female Single Ended Cable - Unshielded	5 m	**TC0505MIE000071P**
		10 m	**TC0510MIE000071P**
	M12 Straight 5 Pin Female to Male Double Ended Cable - Unshielded	5 m	**TC0505MIETA0571P**
		10 m	**TC0510MIETA0571P**
	M12 90° 5 Pin Female Single Ended Cable - Unshielded	5 m	**TD0505MIE000071P**
		10 m	**TD0510MIE000071P**

Technical Data	Cable	M12 Field Wireable	Pin Out/Color Code
Molded Body/Insert	TPU	Polyamide	Female View 
Coupling Nut	Nickel Plated Zinc	Nickel Plated Zinc	
Cable Jacket Material	PUR	NA	
Cable O.D.	5mm	Accepts 3 – 6.5 mm	
Voltage Rating	60 V	125 V	
Current Rating	4 A	4 A	
Degree of Protection	IP65 (mated)	IP65 (mated)	
Operating Temperature	-25°C to 90°C	-20°C to 100°C	
Conductor Gauge	22 AWG	18 – 24 AWG	
Minimum Bend Radius	50 mm	NA	
Wire Connection	NA	Screw Terminal	

PROFIBUS ™ DP

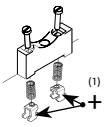
PROFIBUS™ DP is a vendor-independent, open fieldbus protocol designed for communication between automation control systems and distributed I/O at the device level.

Aventics' 580 nodes for PROFIBUS™ DP have an integrated graphic display.

The 580 nodes for PROFIBUS™ DP have been designed and tested to conform to the PROFIBUS™ standard EN50170. Certification has been done by the PROFIBUS™ Interface Center (PIC) according to the guidelines determined by the PROFIBUS™ Trade Organization (PTO). The certification process ensures interoperability for all PROFIBUS™ devices.

More information regarding PROFIBUS™ can be obtained from the following WEB site:

www.profibus.com



Description	Replacement Part Number
PROFIBUS™ DP communications module DPV0/DPV1	P580AEPT101071W
	P580AEPT1010D45 (1)

PROFIBUS™ DP

COMMUNICATION
FEMALE OUT

Pin 1 = +5V DC
Pin 2 = RxD/TxD-N / Data Line A
Pin 3 = DATA GROUND (0V DC)
Pin 4 = RxD/TxD-P / Data Line B
Pin 5 = No Connected
Thread = Shield

POWER
MALE

Pin 1 = +24 V DC (node)
Pin 2 = 0 V DC (Valves)
Pin 3 = 0 V DC (node)
Pin 4 = +24 V DC (Valves)
Pin 5 = Earth Ground

COMMUNICATION
MALE IN

Pin 1 = No Connected
Pin 2 = RxD/TxD-N / Data Line A
Pin 3 = No Connected
Pin 4 = RxD/TxD-P / Data Line B
Pin 5 = No Connected
Thread = Shield

Technical Data

Electrical Data	Rated Voltage	Current
Node Power	24 VDC (2)	0.08 A
Valves	24 VDC (2)	4 A Maximum
Power Connector	A-Coded 5 pin M12 (male)	
Communication Connector	Single reverse key (B-Coded) 5 Pin M12 (1 male and 1 female)	
LEDs	Module Status and Network Status	
Operating Data		
Temperature Range (ambient)	-10ºC to +50ºC	
Humidity	95% relative humidity, non-condensing	
Vibration / Shock	IEC 60068-2-27, IEC 60068-2-6	
Moisture Protection	IP65	
Configuration Data		
Graphic Display	Display used for setting Node Address, Fault/Idle Actions, and all other system settings.	
Maximum Valve-Solenoid Outputs	128 (Series 501) / 80 (Series 502)	
Network Data		
Supported Baud Rates	Auto-Baud (From 9.6k to 12m Baud)	
Communication Connector	Single reverse key (B-coded) 5 pin M12 (1 male and 1 female)	
Diagnostics	Power, short, open load conditions and module health are monitored	
Weight		
PROFIBUS™ DP Communication Module	326 g	
Certification		
II 3G Ex ec IIC T4 Gc		

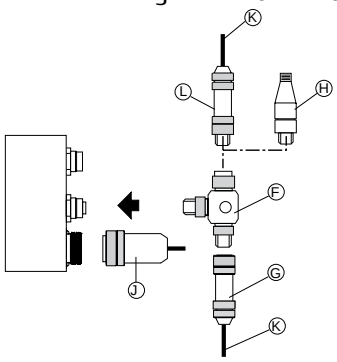
(2) Voltage supply tolerance +/- 10%

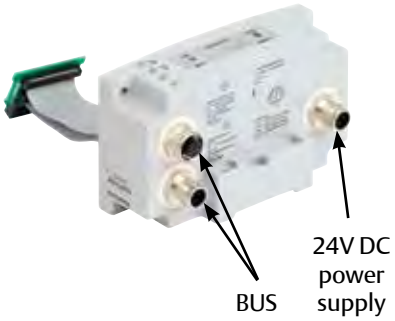
PROFIBUS™ DP bus connection

The front panel of the communication module for PROFIBUS™ DP is equipped with:
- a 5 pin male 7/8" socket for power supply
- a 5 pin male M12-B socket or 5 pin female M12-A socket for the bus cable (with a T-connector on integrated M12 COM-IN/COM-OUT connector)

Fieldbus connection

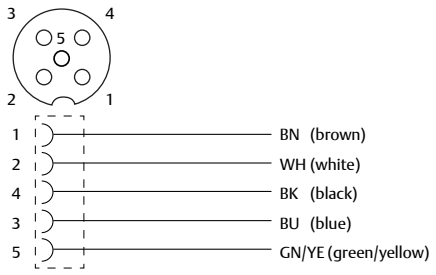
Wiring with T-connector





Accessories for PROFIBUS™ DP

The modules on either side of the system must be provided with terminating resistors (H)

	Accessory	Description	Catalog number
F		T-connector M12-B, 5 female / male / male pins (Profibus 12Mb max)	**88100712**
G		M12-B network connector, 5 female pins - for cable dia. 6 - 8 mm (Profibus 12Mb max)	**88100713**
		M12 90° 5 Pin Male & Female Field Wireable network Connectors, w/IDC PG9 Cable Gland – IDC FEMALE	**RD05F200P000071V**
L		M12-B network connector, 5 male pins - for cable dia. 6 - 8 mm (Profibus 12Mb max)	**88100714**
		M12 90° 5 Pin Male & Female Field Wireable network Connectors, w/IDC PG9 Cable Gland – IDC MALE	**RB05F200P000071V**
H		Terminating resistor M12-B - male plug	**88100716**
J		M 12 90° 5 Pin Female Field Wireable Connector (24 V DC supply, PG 9 Cable Gland)	**TD05F20000000000**
		M12 90° 5 Pin Female Single Ended Cable, Euro Color Code (5 pin elbow female cable connector, 24 V DC supply, with 10 m cable) 	**TD0510MAE0000000**
		Dust cover - M12 female	**88157773**

(K) Cable to be ordered separately.

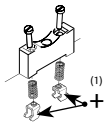
PROFINET®

PROFINET® is the innovative open standard for Industrial Ethernet, development by Siemens and the Profibus® User Organization (PNO). PROFINET® complies to IEC 61158 and IEC 61784 standards. PROFINET® products are certified by the PNO user organization, guaranteeing worldwide compatibility.

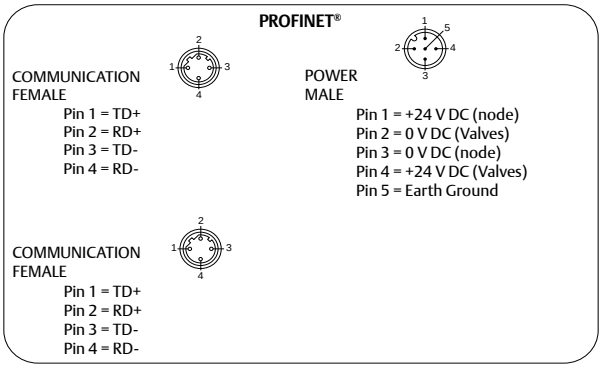
Aventics' 580 nodes for PROFINET IO (PROFINET RT) have an integrated graphic display.

PROFINET® is based on Ethernet and uses TCP/IP and IT standards and complements them with specific protocols and mechanisms to achieve Real Time performance. Additionally, the 580 node PROFINET® can integrate an on-board Web server, which can make the node readily accessible for configuration, testing and even retrieval of technical documentation.

More information regarding PROFINET® can be obtained from the following WEB site:
www.profibus.com



Description	Replacement Part Number
PROFINET® communications module (node)	P580AEPN101071W
	P580AEPN1010D45 (1)

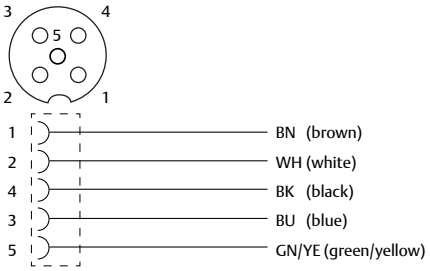


Technical Data

Electrical Data	Rated Voltage	Current
Node Power	24 VDC (2)	0.11 A
Valves	24 VDC (2)	4 A Maximum
Power Connector	A-Coded 5 Pin M12 (male)	
Communication Connector	Two D-Coded 4 Pin M12 (female)	
LEDs	System Fault, Bus Fault and Activity/Link	
Operating Data		
Temperature Range (ambient)	-10ºC to +50ºC	
Humidity	95% relative humidity, non-condensing	
Vibration / Shock	IEC 60068-2-27, IEC60068-2-6	
Moisture Protection	IP65	
Configuration Data		
Graphic Display	Display used for setting IP Address, Subnet Mask, Fault/Idle Actions, and all other system settings.	
Maximum Valve-Solenoid Outputs	128 (Series 501) / 80 (Series 502)	
Network Data		
Supported Baud Rates	10 Mbit / 100 Mbit	
Communication Connector	Two D-Coded 4 Pin M12 (female)	
Diagnostics	Power, short, open load conditions and module health and configuration are monitored	
Special Features	Integrated web server, Integrated 2 port switch, fail-safe device settings	
Weight		
PROFINET® Communication Module	335 g	
Certification		
II 3G Ex ec IIC T4 Gc		

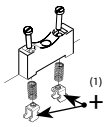
(2) Voltage supply tolerance +/- 10%

Accessories for PROFINET®

Accessory	Description		Catalog number
	M12 Straight 4 Pin Male D-Coded to Male RJ45 network Cable - Shielded	5 m	QA0405MK0VA04000
		10 m	QA0410MK0VA04000
	M12 elbow 4 Pin Male D-Coded Field Wireable network Connector PG 9 Cable Gland – Screw Terminal		QB04F2000000071N
	M 12 90° 5 Pin Female Field Wireable Connector (24 V DC supply, PG 9 Cable Gland)		TD05F20000000000
	M12 90° 5 Pin Female Single Ended Cable, Euro Color Code (5 pin elbow female cable connector, 24 V DC supply, with 10 m cable)		TD0510MAE0000000

580 CHARM Node

The 580 CHARM node provides direct connectivity of pneumatic manifolds to DeltaV with Electronic Marshalling. The node connects directly to the CHARM I/O baseplate via 2 cables which attach to CHARM column extender. The cables provide redundant communication and power to the pneumatic manifold and allow the 580 CHARM node to be directly controlled by DeltaV Explorer. The 580 CHARM node configures the same as a DO CHARM.



Description	Replacement Part Number
580 CHARM module (node)	P580AECH101071W
	P580AECH1010D45 (1)

Technical Data

Electrical Data	Rated Voltage	Current
Bus Power	6.3 V	100 mA
Valve Power	24 V	1.07 A
Power and Bus Connector	A-Coded 5 Pin M12 (male)	
LEDs	Module Status and Network Status	

Operating Data	
Temperature Range (ambient)	-10ºC to +50ºC
Humidity	95% relative humidity, non-condensing
Vibration / Shock	IEC 60068-2-27, IEC60068-2-6
Moisture Protection	IP65

Configuration Data	
Graphic Display	Display used for setting CHARM address and all other system settings.
Maximum Valve-Solenoid Outputs	96 for 501 / 64 for 502/503

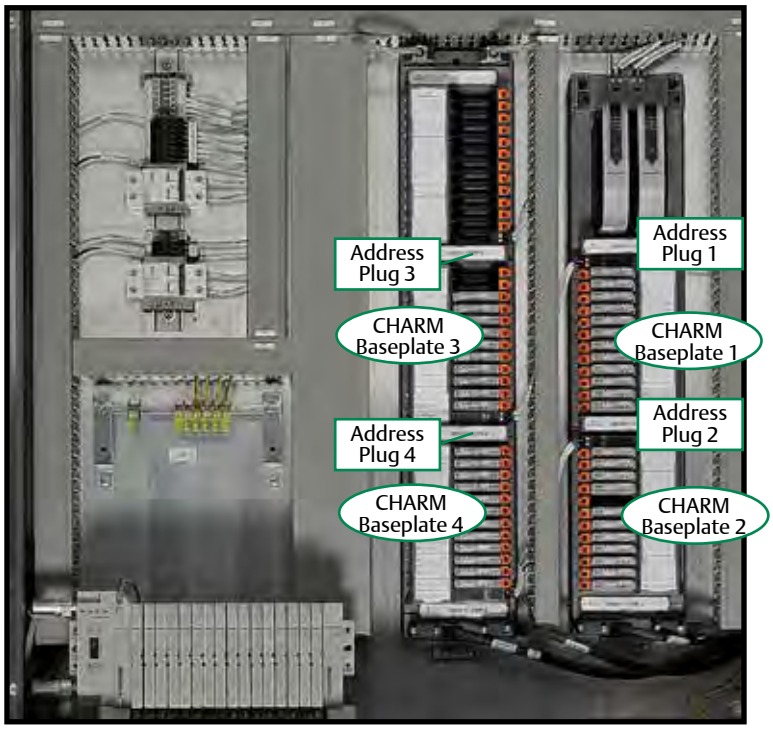
Network Data	
Power and Bus Connectors	A-coded 5 Pin M12 (male)
Diagnostics	Power, short, open load conditions are monitored
DeltaV version	Compatible DeltaV series S ; FHX file integrated in v13 version ; download file for v11 and v12 versions

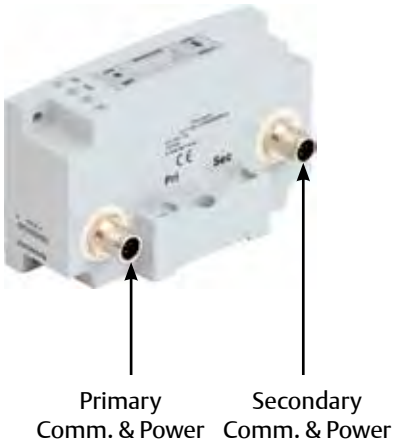
Weight	
CHARM Communication Node	320 g

Certification
II 3G Ex ec IIC T4 Gc

CHARM Communication & Power connection

the front panel of the communication module is equipped with a 5 pin M12.

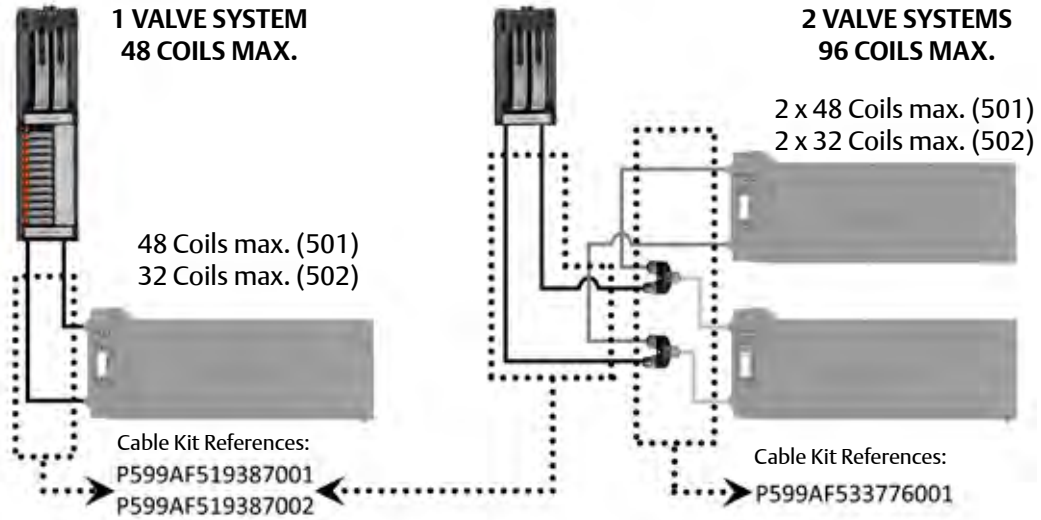




Both Cables provide 6.3 V for Comm. and 24 V for valve Power

Accessories for CHARM

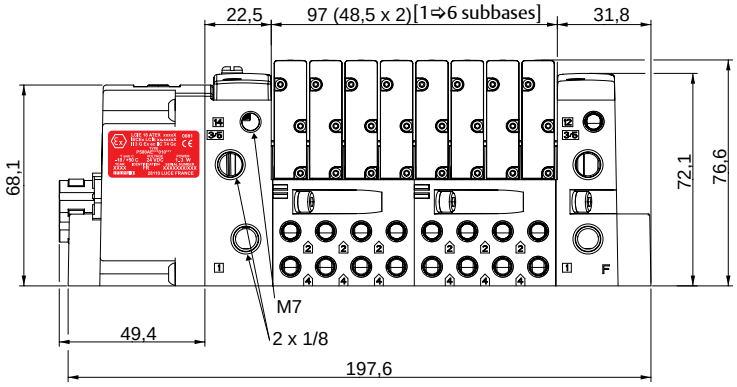
Accessory	Description	Catalog number
-	1.5 Meter Cable with M12 and Sub-D Connectors (Moulded version)	**P599AF519387001**
-	0.5 Meter Cable with M12 and Sub-D Connectors (Moulded version)	**P599AF519387002**
	Valve Power Isolator M12-Y	**P599AF516881001**
-	Cable kit to connect 2 CHARM modules for 96 coils capability maximum	**P599AF533776001**

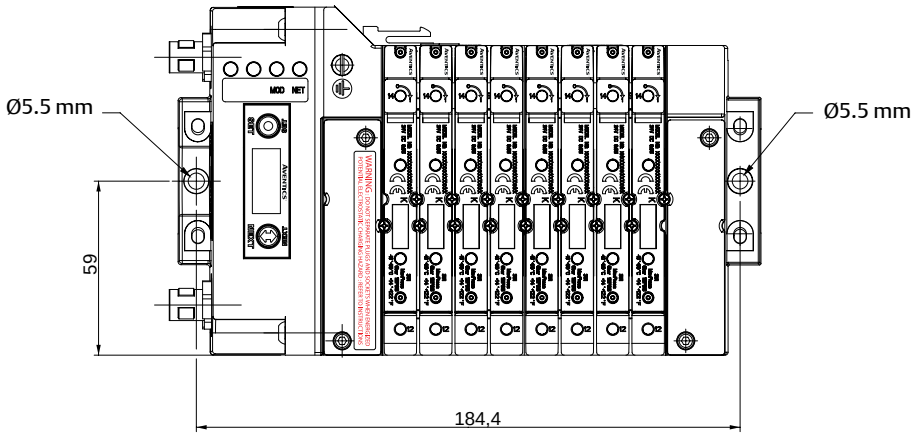


Dimensions (mm) - Encombrements (mm) - Ensemble îlot de distribution 580

Series 501 Valve Manifold Assembly with 580 Electronics

Configurator - CAD Files

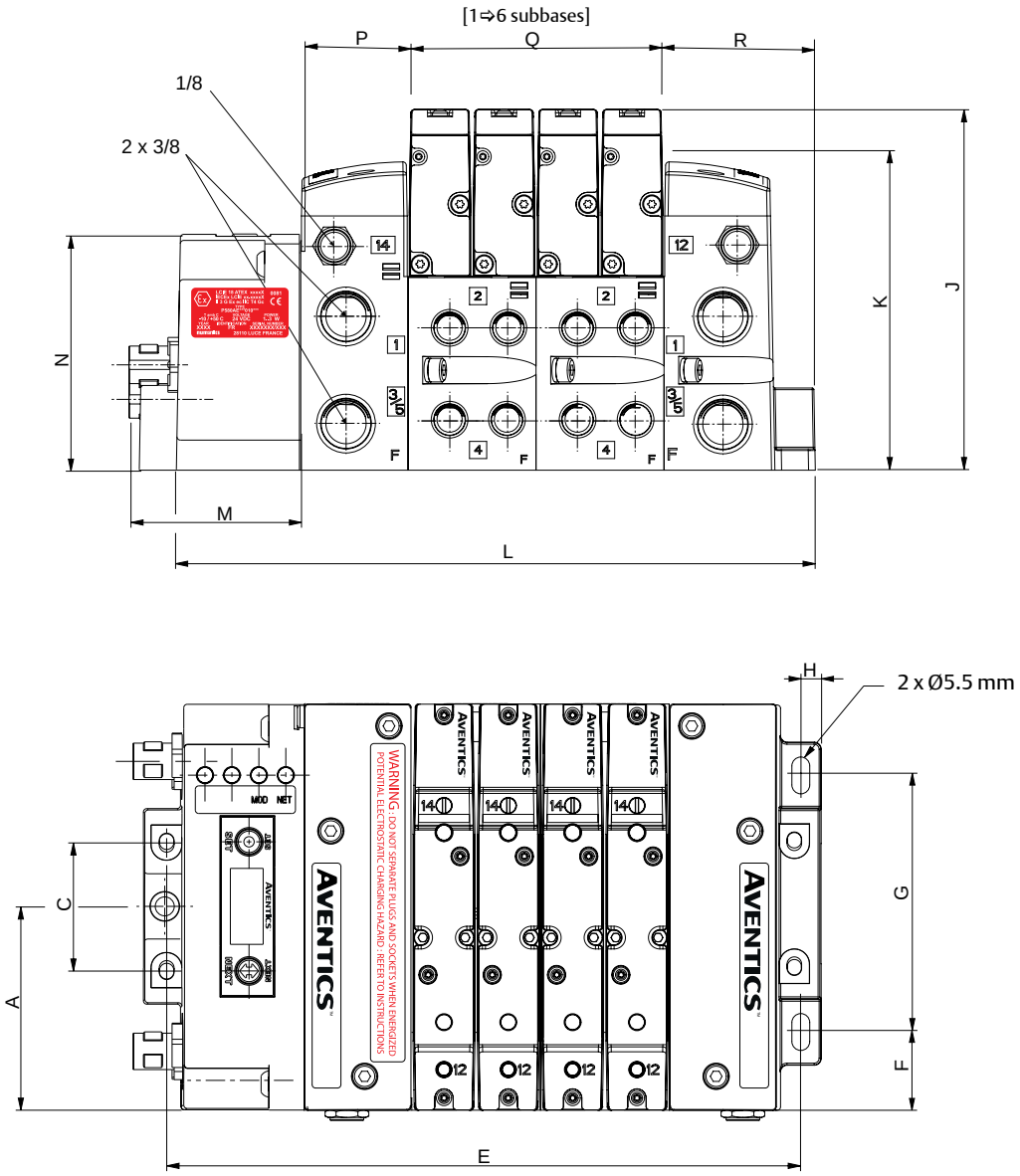




* - For valve manifold dimensions refer to Valve Series product catalogs

Dimensions (mm) - Encombrements (mm) - Ensemble îlot de distribution 580

Series 502 Valve Manifold Assembly with 580 Electronics



A	C	E	F	G	H	J	K	L	M	N	P	Q	R
60	38	186.95	23.1	75.8	6	107.3	91.5	187.8	49.4	68.1	31.8	76	45

* - For valve manifold dimensions refer to Valve Series product catalogs

Ex CERTIFICATION

- Ex Directive
- Apparatus suitable for use in Ex Group II, Category 3, gas (G)
- Temperature class: T4 (gas)
- Ambient temperature range: -10°C ≤ Ta ≤ +50°C (501/502)
- Marking: **II 3G Ex ec IIC T4 Gc**

SPECIAL CONDITIONS FOR SAFE USE

- The apparatus must be installed in a control cabinet with a protection degree of min. IP54 in conformance with standards EN/IEC 60079-0 and EN/IEC 60079-7.
  For gas and dust application (Zone 2 and 22). The control cabinet must conform to EN 60079-31 additionally with a protection degree of IP54 or IP65 minimum depending on dust category.
- **WARNING – LIVE PARTS: DO NOT DISCONNECT CONNECTORS FROM SOCKETS WHILE POWER IS ON**
- The cross-section of the ground cable must be equal to the minimum cross-section of the supply cable. Provide for equipotential bonding between the apparatus and the control cabinet.
- Electrical connections must be made by qualified personnel to ensure reliable operation. The contact pressure of electrical connections must be maintained during regular operation.
- **WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS**
- Precautions shall be taken to guard against any effect due to the presence of circulating current caused by stray magnetic fields.
- Avoid all static charge build-up on the apparatus.
- No air movement inside the cabinet.
-

	max. coils [1]	
	501	502
580	128 [1] / 32 [2]	80 [1] / 32 [2]
580 CHARMs	48	32

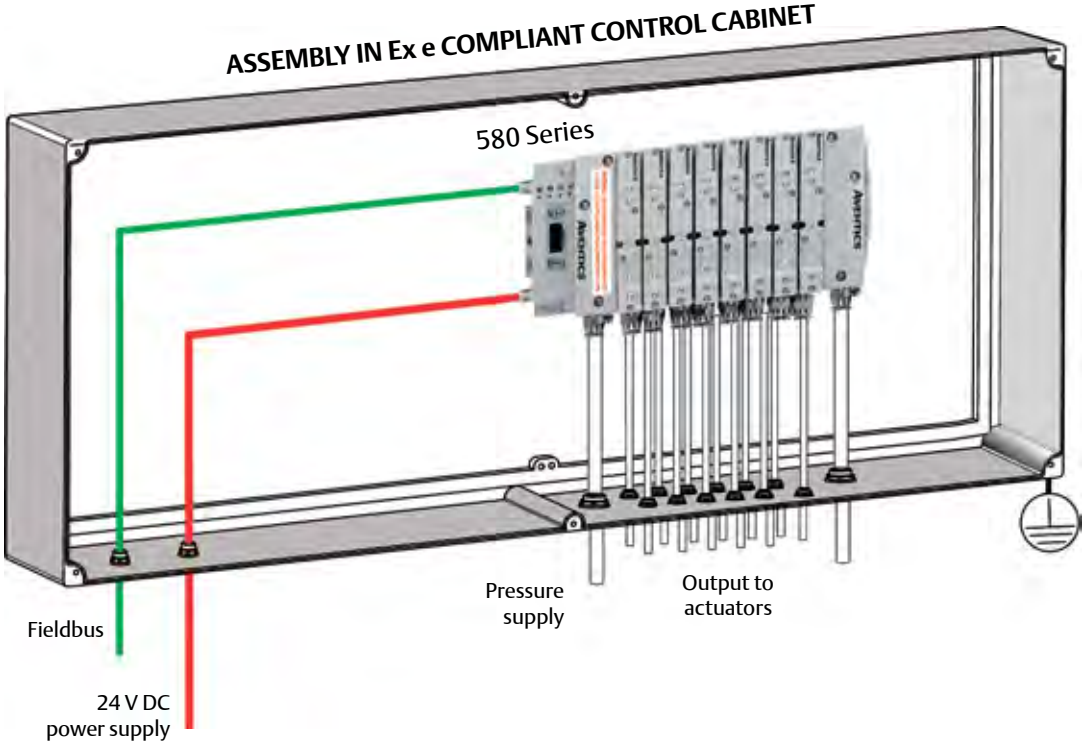
[1] PROFIBUS-DP®, PROFINET®, EtherNET/IP™ DLR
[2] DeviceNet™, IO-Link Class A, IO-Link Class B

26.4 V max. / 6.9 V max. CHARM

[1] Do not exceed the max. number of pilot solenoid valves authorised.

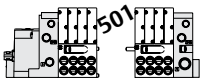
- The internal temperature of the cabinet may not exceed the minimum and maximum temperatures specified on the product.
- Do not disassemble any component of the device except when replacing spare parts.
- The specifications of IP54 min. must be met when installing the device in the cabinet.

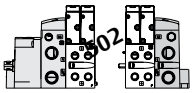
ASSEMBLY IN Ex e COMPLIANT CONTROL CABINET



501-502

How to Order
Manifold assemblies kit (Electronic + End plate)





PRODUCT CODE

G	501	A	V	3	H	1	0	0	V	71W

Thread connection
G = ISO 228/1
8 = NPT (contact us)
K = Push-in connectors

Product series
501 (11 mm valve)
502 (18 mm valve)

Revision letter
A = Initial release

Product type
V = Valve Manifold Assembly

Electronics
8 = **580 Fieldbus Electronics**
D = CHARMs Electronics

Number of Valve Stations

501				502	
A = NA/33*	**I** = 9/41*	**Q** = 17	**Y** = 25*	**B** = 2/34/66	**R** = 18*/50
B = NA/34*	**J** = 10/42*	**R** = 18	**Z** = 26*	**D** = 4/36/68	**T** = 20*/52
C = 3/35*	**K** = 11/43*	**S** = 19*	**2** = 27*	**F** = 6/38/70	**V** = 22*/54
D = 4/36*	**L** = 12/44*	**T** = 20*	**3** = 28*	**H** = 8/40/72	**X** = 24*/56
E = NA/37*	**M** = 13/45*	**U** = 21*	**4** = 29*	**J** = 10/42/74	**Z** = 26*/58
F = 6/38*	**N** = 14/46*	**V** = 22*	**5** = 30*	**L** = 12/44/76	**3** = 28*/60
G = 7/39*	**O** = 15/47*	**W** = 23*	**6** = 31*	**N** = 14*/46/78	**5** = 30*/62
H = 8/40*	**P** = 16/48*	**X** = 24*	**7** = 32*	**P** = 16*/48/80	**7** = 32*/64

* 580 CHARMs only.

Options
71W = Prepared for Ex approvals
D45 (1) = 71W + DRM
84S (2) = 71W + 14X
72P (3) = 71W + 14X + DRM
(1) DIN Rail Mount

(2) External pilot supply from port 14

(3) External pilot supply from port 14 and DIN Rail Mount

End Plate Style
V = Vertical

Valve Station Adder
0 = No Adder
1 = 32+
2 = 64+
3 = 96+ (501 only)

End Plate Port Size (1-3-5)
501:
Used with the first digit «G» or «8»:
1 = 1/8 (female thread only)
Used with the first digit «K»:
H = 6 x 8 mm (push-in connector)
2 = 1/4
G = 5/16
502:
Used with the first digit «G» or «8»:
3 = 3/8 (manifold base)
Used with the first digit «K»:
K = 8 x 10 mm (push-in connector)
M = 10 x 12 mm (push-in connector)
4 = 1/2

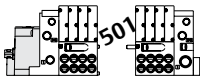
	max. coils	
	501	502
580	128 (1) / 32 (2)	80 (1) / 32 (2)
580 CHARMs	48	32

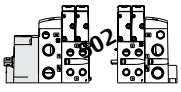
26.4 V max. / 6.9 V max. CHARM

(1) PROFIBUS-DP®, PROFINET®, EtherNET/IP™ DLR
(2) DeviceNet™, IO-Link Class A, IO-Link Class B

501-502

How to Order
580 Electronics





PRODUCT CODE

P	580	A	E	DN1	0	1	0	71W

Product series
580 Fieldbus Electronics

Revision letter
A = Initial release

Actuation
E = Electronics

ATEX options
71W = Prepared for Ex approvals
D45 (1) = 71W + DRM
(1) DIN Rail Mount

Connector Type
1 = M12 Connector (push-in connector)

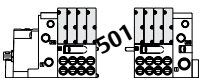
Protocol

DN1 = DeviceNet™	**LM1** = IO-Link® Class A (4 pin)
ED1 = EtherNet/IP™ DLR	**LM2** = IO-Link® Class B (5 pin)
PN1 = PROFINET®	
PT1 = PROFIBUS™ DP	
CH2 = CHARM	

501

How to Order
Valves

Configurator - CAD Files



PRODUCT CODE

R	501	A	2	B	4	0	M	71W	F1

Thread connection
R = Pad mount

Product series
501 (11 mm valve)

Revision letter
A = Initial release

Actuation
2 = Rubber packed

Valve type
B = Solenoid pilot

Function
A = 2x3/2 NO, dual 3-way
C = 2x3/2 NCx NO, dual 3-way
D = 2x3/2 NC, dual 3-way
F = 2x3/2 NOxNC, dual 3-way
N = 5/2, Differential air return
1 = 5/2, spring return
4 = 5/2, solenoid air return
5 = 5/3, W3, open center to exhaust
6 = 5/3, W1, center closed
7 = 5/3, W2, open center to pressure

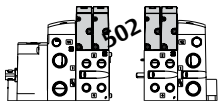
Options
71W = Prepared for Ex approvals
(With impulse manual operator)
82L = 71W + 11B
(With maintained manual operator)
84A = 71W + 11M
(Without manual operator)

Electrical interface
M = Plug-in (with LED indicator / DC)

Voltage - class
F1 = 24 V DC - class F

502

How to Order
Valves



PRODUCT CODE

R	502	A	2	B	1	0	M	71W	F1

Thread connection
R = Pad mount

Product series
502 (18 mm valve)

Revision letter
A = Initial release

Actuation
1 = Spool and sleeve
2 = Rubber packed (2x3/2 NC, only)

Valve type
B = Solenoid pilot

Function
D = 2x3/2 NC, dual 3-way
N = 5/2, Differential air return
1 = 5/2, spring return
4 = 5/2, solenoid air return
5 = 5/3, W3, open center to exhaust
6 = 5/3, W1, center closed
7 = 5/3, W2, open center to pressure

Options
71W = Prepared for Ex approvals
(With impulse manual operator) (1)
82L = 71W + 11B
(With maintained manual operator)
84A = 71W + 11M
(Without manual operator)

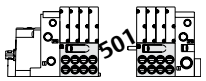
Electrical interface
M = Plug-in (with LED indicator / DC)

Voltage - class
F1 = 24 V DC - class F

(1) Used external spool valves (internal/external supply configurated in the end plate kits).
For internal piloting, contact us.

501

How to Order
Subbases



PRODUCT CODE

H	501	A	M	S4	2	M	71W	1	0

Thread connection
H = Metric thread
K = Push-in connectors

Product series
501 (11 mm valve)

Revision letter
A = Initial release

Product type
M = Manifold base
Z = Mid station supply
F = 32+ Solenoid Manifold Subbase

Mounting
S3 = Manifold base, 3 stations, side port, single Z-Board™
M3 = Manifold base, 3 stations, side port, double Z-Board™
S4 = Manifold base, 4 stations, side port, single Z-Board™
M4 = Manifold base, 4 stations, side port, double Z-Board™
Q4 = Manifold base, 4 stations, side port, single Z-Board™ Panel Mount
P4 = Manifold base, 4 stations, side port, double Z-Board™ Panel Mount
M8 = 32+ Manifold Sub Base, 8 Stations, Side Ports, Double Z-Board™

Port connection
B = M7 (female thread only)
D = 2.7 x 4 mm [push-in connector only] (Mid station supply not available)
F = 4 x 6 mm [push-in connector only]
2 = 1/4 (push-in fittings only)

Wiring option
M = Plug-in Receptable assembly
T = 32+ Solenoid Auxiliary Power (used with M4 and F)

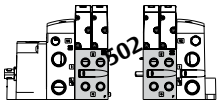
Options
71W = Prepared for Ex approvals
85H [1] = 71W + 96X
[1] 4 mm Port Size Override for Stations 5-8 of the 128 Solenoid Manifold Sub Base

Interface
1 = High flow

Not use

502

How to Order
Subbases



PRODUCT CODE

G	502	A	M	S2	2	M	71W	1	0

Thread connection
G = ISO 228/1
8 = NPT (contact us)
K = Push-in connectors

Product series
502 (18 mm valve)

Revision letter
A = Initial release

Product type
M = Manifold base
Z = Mid station supply

Mounting
S2 = Manifold base, 2 stations, side port, single Z-Board™
M2 = Manifold base, 2 stations, side port, double Z-Board™

Port connection (2-4)
Used with the first digit «G» or «8»:
2 = 1/8 (female thread only)
Used with the first digit «K»:
F = 4 x 6 mm [push-in connector only]
H = 6 x 8 mm [push-in connector only]

Wiring option
M = Plug-in

ATEX options
71W = Prepared for Ex approvals

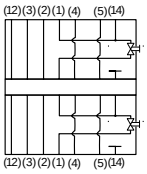
Interface
1 = Pneumatic high flow

Not use

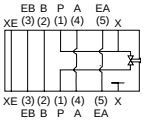
Sandwich shut off block (501-502 Series)

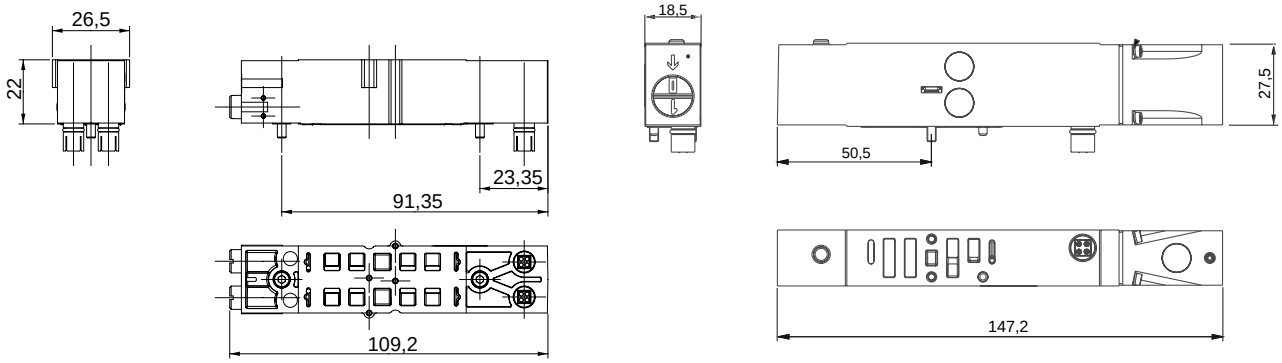
- Used to shut-off pressure to the valve which is mounted above it.
- Allows easy maintenance without the need to shut-off pressure to the whole manifold. (specified for 2x3/2 NC-NC valve)

Series 501



Series 503





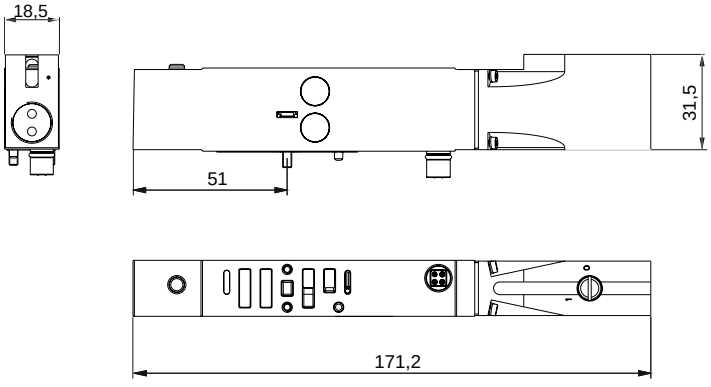
Usable only for internal pilot supply island

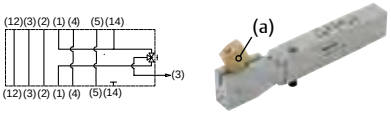
Pay attention to residual pressures

The valve(s) should not be energised during disassembly

	Catalog number	Description
501	**R501AY428501001**	Sandwich shut off block (double)
502	**R502AY429409002**	High Flow - Sandwich shut off block

	weight (kg)
501	0.11
502	0.145





	Catalog number	Description
502	**R502AY429409006**	High Flow - Lockable shut off block

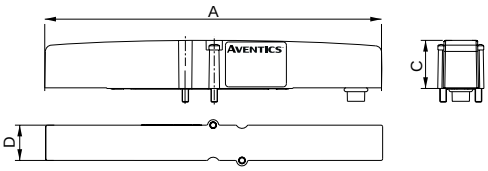
(a) The Lock is in not included with this accessory.

	weight (kg)
502	0.176

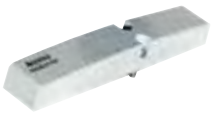
Blank station plate kit

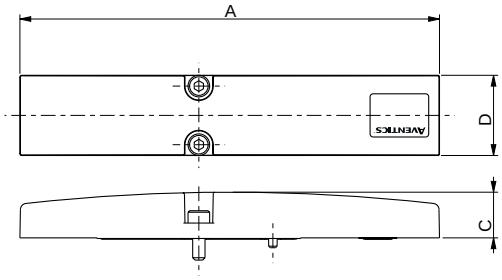
- Used to block off a manifold station block for future use

Series 501



Series 502





	Catalog number
501	**P501AB429685002**
502	**P502AB431813002**

	A	C	D	weight (kg)
501	105	15	11	0.027
502	120	15	18.5	0.058

Blocking Discs

	Port	Catalog number	
		501	502
+ 1	1 ⚠	**P501AD431915001**	**P502AD431914001**
+ 3	3	**P501AD431915002**	**P502AD431914002**
+ 5	5	**P501AD431915003**	**P502AD431914003**
+ 1/3	1 + 3	**P501AD431915004**	**P502AD431914004**
+ 1/5	1 + 5	**P501AD431915005**	**P502AD431914005**
+ 3/5	3 + 5	**P501AD431915006**	**P502AD431914006**
+ 1/3/5	1, 3, 5	**P501AD431915007**	**P502AD431914007**

⚠ **502: External pilot only.**

Features

- *The 501 range has an adaptation plate for direct mounting on a cabinet side or bottom walls, for use in hazardous locations, zone 3G or 3D or 3GD*
  These adaptation plates are available in aluminium or stainless steel AISI 316L for 8, 12, 16 or 24 position island configurations. They can be only ordered installed directly on the island with or without quick connectors.
- *High flow rate up to 400 l/min*
- *Wide electrical connection selection : G3 or 580 Fieldbus Electronics, 25 or 37 Pin Sub-D connector, 19 or 26 Pin Round connector, 1-32 Terminal Strip*
- *Version with integrated LED and electrical protection.*
  LED indicator visible from 3 sides

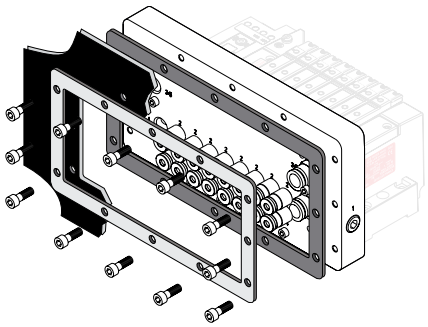
General

Operating pressure	See «SPECIFICATIONS» [1 bar =100 kPa]
Ambient temperature range (TS)	-10°C to +50°C (1)
Rated flow	See «SPECIFICATIONS»
conforming to ISO 6358	C (5/2) = 1.45 x 10^{-8} m^3/s.Pa (sonic conductance)
	b (5/2) = 0.40 (critical pressure ratio)
Pneumatic base	4 station subbases
Connection	Joinable subbase
Response time	See «SPECIFICATIONS»

Fluids (✶)	Temperature range (TS)	Technology	Seal materials (✶)
air or inert gas filtered at 50 µm, lubricated or not	-10°C to +50°C (1)	rubber packed	FPM (fluoroelastomer)

(1) **The internal temperature of the cabinet must not exceed +50°C (overheating included).**

Version without Vertical Shut Off

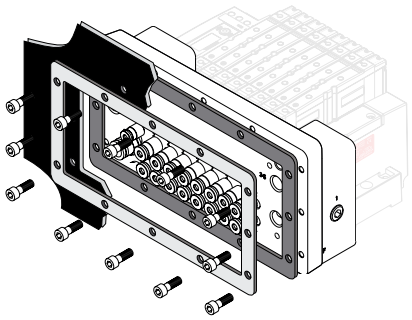


Materials in contact with fluid

(✶) Ensure that compatibility of materials in contact with fluids is verified.

501 Island	
Body	Zamak, E-coating treatment
Spool	Aluminium
Piston	POM
Spring	Stainless steel
Other seals	NBR
Other materials	PAM (polyarylamide) , GF 50% (glass fiber reinforced)
Subbases	Aluminium, E-coating treatment
Version without Vertical Shut Off	
Port plate	Aluminium or stainless steel AISI 316L
Flat seal	FPM
Support flange	Stainless steel AISI 316L
Version with Vertical Shut Off	
Port plate	Stainless steel AISI 316L
Flat seal	FPM
Support flange	Stainless steel AISI 316L
Spacer plate	Aluminium

Version with Vertical Shut Off



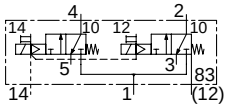
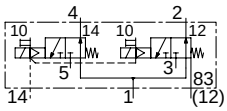
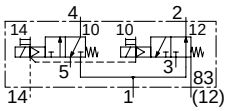
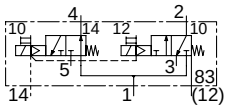
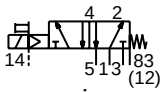
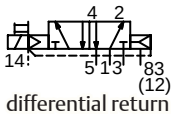
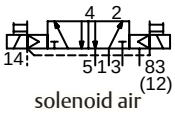
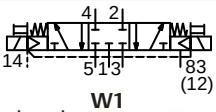
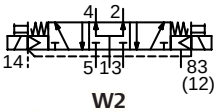
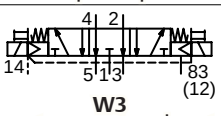
Electrical characteristics

Coil insulation class	F
Electrical safety	IEC/EN 60079-0 ; IEC/EN 60079-7
Electrical enclosure protection	IP65 (EN 60529)
Standard voltages	DC (=) : 24V
Power ratings (=)	G3: 0.81 W / 0.33 W (inrush/holding)
	580 CHARMs: 0.81 W/0.33 W (inrush/holding)
	580/599: 0.7 W / 0.8 W (hot/cold)

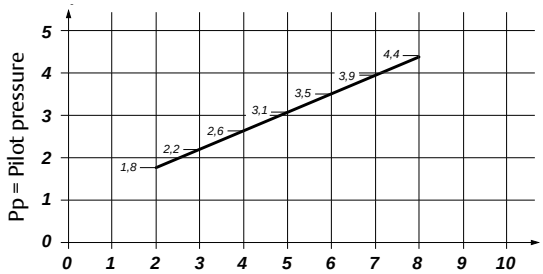
Ex certification

The cabinet mounting kit is not included in the IECEx and ATEX certifications.
The device must be installed in a control cabinet with a protection degree of IP54 in accordance with the standards EN/IEC 60079-0 and EN/IEC 60079-7.
A validation from a third party (Notified Body) about the complete control cabinet is required for IECEx.

Specifications

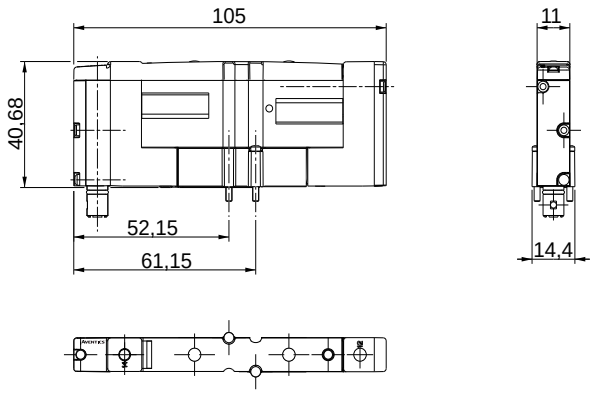
Function	Type	Symbol Pilot (14) Return (12)	Rated flow at 6.3 bar ΔP 1 bar l/min (ANR) 1→2 1→4	Rated flow 2→3 4→5	Response time Open / Closed (ms)	Pilot pressure at 23°C (bar) Min.	Pilot pressure Max.	Operating pressure Port 1 Min.	Operating pressure Port 1 Max. (PS) Air (✶) =	Catalog number
SPOOL VALVE, RUBBER PACKED TECHNOLOGY, WITH IMPULSE MANUAL OPERATOR										
2 x 3/2 NC	K	 spring	405	415	18 / 18	(a)	8	2	8	**R501A2BD0M71WF1**
2 x 3/2 NO	N	 spring	400	400	18 / 18	(a)	8	2	8	**R501A2BA0M71WF1**
2 x 3/2 NC x NO	H	 spring	405 400	415 400	18 / 18	(a)	8	2	8	**R501A2BC0M71WF1**
2 x 3/2 NO x NC	P	 spring	400 405	400 415	18 / 18	(a)	8	2	8	**R501A2BF0M71WF1**
5/2	S	 spring	405	410	14 / 29	2	8	-0.95	8	**R501A2B10M71WF1**
	M	 differential return	405	410	25 / 21	2	8	-0.95	8	**R501A2BN0M71WF1**
	J	 solenoid air	405	410	11 / 11	2	8	-0.95	8	**R501A2B40M71WF1**
5/3	G	 **W1** closed centre position	405	410	13 / 12	2	8	-0.95	8	**R501A2B60M71WF1**
	B	 **W2** centre open to pressure	405	360	17 / 38	2.5	8	-0.95	8	**R501A2B70M71WF1**
	E	 **W3** centre open to exhaust	365	415	27 / 12	2	8	-0.95	8	**R501A2B50M71WF1**

(a) Pp = 0.43 x P(1) + 0.9 bar



Dimensions (mm) - Distributeur plug-in

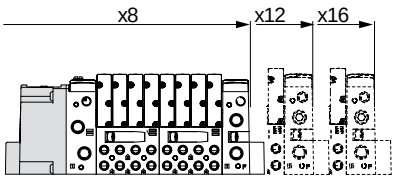
Configurator - CAD Files



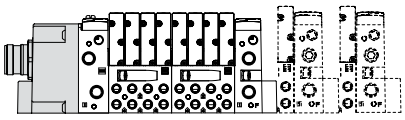
weight (kg)
0.093

Assembly kits

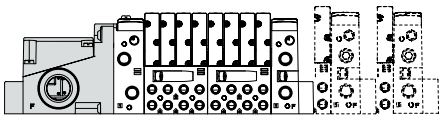
25 or 37 Pin Sub-D



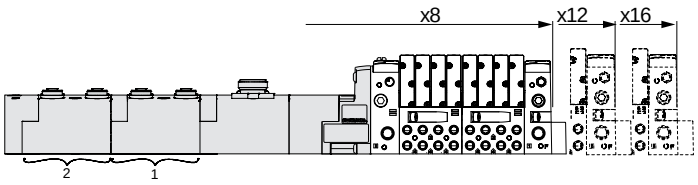
19 Pin Round Connector



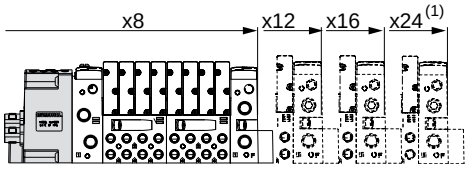
Terminal Strip 1-32



Manifold assembly with G3 Electronics & Discrete I/O



Manifold assembly with 580 Electronics



(1) 580 CHARMs only.

How to Order

Configurator - CAD Files

Manifold assemblies kit (Electronic + End plate)

PRODUCT CODE

G	501	A	V	3	8	1	00	P	A36

Thread connection
G = ISO 228/1
8 = NPT (contact us)

Product series
501 (11 mm valve)

Revision letter
A = Initial release

Product type
V = Valve Manifold Assembly

Electronics
8 = **580 Fieldbus Electronics**
D = CHARMs Electronics
3 = **G3 Fieldbus Electronics**
J = 25 Pin Sub-D Connector
M = 37 Pin Sub-D Connector
Q = 19 Pin Round Connector
T = Terminal Strip 1-32

Number of Valve Stations
H = 8
L = 12
P = 16
X = 24

Options
71W = Prepared for Ex approvals
D45 (1) = 71W + DRM
84S (2) = 71W + 14X
72P (3) = 71W + 14X + DRM
(1) DIN Rail Mount

(2) External pilot supply from port 14

(3) External pilot supply from port 14 and DIN Rail Mount

End Plate Style
P = Panel Mount - Vertical End Plates

End Plate Port Size (1-3-5)
Used with the first digit «G» or «8»:
1 = 1/8 (female thread only)

How to Order

Subbase

PRODUCT CODE

H	501	A	M	Q4	B	M	71W	1	0

Thread connection
H = Metric thread
K = Push-in connectors

Product series
501 (11 mm valve)

Revision letter
A = Initial release

Product type
M = Manifold base
Z = Mid station supply
F = 32+ Solenoid Manifold Subbase

Mounting
Q4 = Manifold base, 4 stations, side port, single Z-Board™ Panel Mount
P4 = Manifold base, 4 stations, side port, double Z-Board™ Panel Mount

Wiring option
M = Plug-in

Port connection
B = M7 (female thread only)

How to Order
Valves

PRODUCT CODE

R	501	A	2	B	1	0	M	71W	F1

Thread connection
R = Pad mount

Product series
501 (11 mm valve)

Revision letter
A = Initial release

Actuation
2 = Rubber packed

Valve type
B = Solenoid pilot

Function
A = 2x3/2 NO, dual 3-way
D = 2x3/2 NC, dual 3-way
C = 2x3/2 NC x NO, dual 3-way
F = 2x3/2 NO x NC, dual 3-way
N = 5/2, Differential air return
1 = 5/2, spring return
4 = 5/2, solenoid air return
5 = 5/3, W3, open center to exhaust
6 = 5/3, W1, center closed
7 = 5/3, W2, open center to pressure

Electrical interface
M = Plug-in (with LED indicator / DC)

Options
71W = With impulse manual operator
82L = With maintained manual operator
84A = Without manual operator

Voltage - class
F1 = 24 V DC - class F

How to Order
Cabinet mounting

PRODUCT CODE

K	501	A	C	A	8	1	B	0	0	69W

Thread connection
G = ISO 228/1
8 = NPT (contact us)
K = Push-in connectors

Product series
501 (11 mm valve)

Revision letter
A = Initial release

Product type
C = Panel Mount Assembly

Plate Style
S = Stainless steel (AISI 316L)
A = Aluminium
V = Stainless steel AISI 316L with Vertical Shut Off

Number of Valve Stations
D = 8
H = 12
L = 16
X = 24

Supply and Exhaust Ports 1, 3/5 Port Size
Used with the first digit «G» or «8»:
1 = 1/8 (female thread only)
Used with the first digit «K»:
H = 6 x 8 mm (push-in connector)

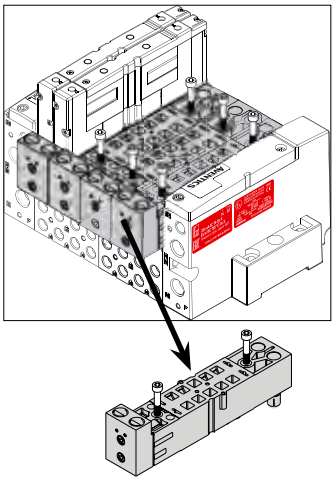
Cylinder Ports 2, 4 Port Size
B = M7 (female thread only)
D = 2.7 x 4 mm (5/32) [push-in connector only] (Mid station supply not available)
F = 4 x 6 mm [push-in connector only]

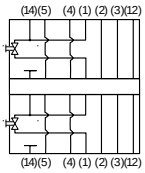
Fitting O-Ring
0 = No Fittings
N = Nickel plated - NBR O-Ring
F = Nickel plated - FKM (FPM) O-Ring
S = Stainless steel - FKM (FPM) O-Ring

Options
69W = External Mounting Flange

Sandwich vertical shut off block

- Used to shut-off pressure to the valve which is mounted above it.
- Allows easy maintenance without the need to shut-off pressure to the whole manifold. (specified for 2x3/2 NC-NC valve)

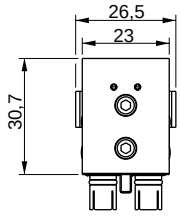


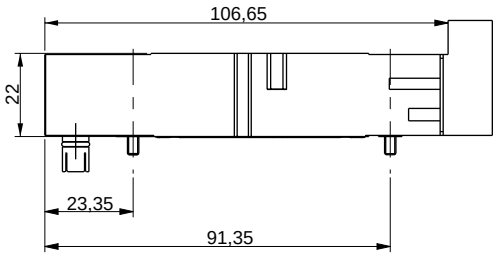


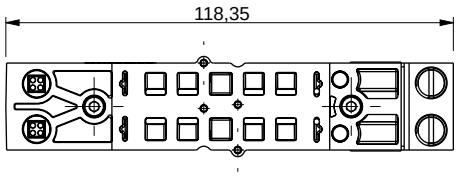
Usable only for internal pilot supply island

Pay attention to residual pressures

The valve(s) should not be energised during disassembly







Catalog number	Description	weight (kg)
R501AY503875002	Sandwich shut off block (double)	0.11