lumbergautomation

A BELDEN BRAND

DeviceNet™ Fieldbus Solutions









Fieldbus Communication for DeviceNet™ Applications

DeviceNet™

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Lumberg Automation™ Provides Reliable DeviceNet Fieldbus Solutions for Industrial Automation Applications Worldwide.





Belden® Industrial Solutions — More Convenience and Solutions for Networks in Harsh Environments and Large-scale Infrastructures

Belden Industrial Solutions

For mission-critical applications, Belden is the signal transmission partner that delivers confidence in signal availability, integrity and performance because only Belden can offer solutions that satisfy any requirement.

A majority of system failures occur within the signal transmission space, and trouble-shooting can be very difficult and time-consuming. We want everyone to "**Be Certain**" that when choosing Belden you receive **Signal Availability** — always there, **Signal Integrity** — always trusted and secure, and **Signal Performance** — always when and where you need it.

Belden has brought together a comprehensive line of industrial cabling, connectivity and networking devices, offering the most reliable communications solutions for your application. Whether you are networking your devices to the controllers, connecting the controllers to the control room, relaying data between the control room, the engineering department, and remote manufacturing sites — or all of the above — Belden has the products you need to seamlessly connect your communications.

From the petrochemical, automotive, pharmaceutical, power generation, pulp and paper, metals, food and beverage, or general manufacturing plant to the corporate headquarters — and everywhere in between — Belden has your signal transmission solution. Belden offers the most dependable network and communications system performance in tough and mission-critical environments.

Our Synergy Ensures Continuous Performance

With the Hirschmann™ and Lumberg Automation™ product line additions to the Belden offering, our line of Complete Industrial Solutions is uniquely positioned to provide the best network and communications infrastructure possible. Belden products and systems expertise means that you can maintain ongoing operations without interruption and costly downtime — in any environment.

Here are a few more good reasons why Belden is your best choice for industrial networking, communications and control:

- We have the expertise to integrate your industrial and commercial networks.
- Our products are engineered to perform in tough and difficult environments.
- We offer the broadest selection of products, for a complete, end-to-end Ethernet solution.
- Our sales and engineering professionals can audit, recommend/design, configure and assemble the products and systems to your specific requirements.
- Our global manufacturing and distribution network make our products available to you globally.

Offering Comprehensive Service & Support

Belden recognizes that comprehensive know-how is necessary to ensure an optimized, homogenous solution. We also know that consultation, support and training requires more than just a general understanding of the products, technologies and market trends. It requires a solid understanding of the application and the ability to provide the type of support that is needed — when and where it is needed. It requires the four key service and support areas that are critical to success:

- Network Design
- Training
- Technical Support
- System Performance

Network Design

Belden eliminates your design challenges because we understand the issues surrounding the design and operation of networks in industrial and mission-critical environments. Our engineers are available to work with you to deliver high-availability networks that meet your enterprise-wide IT needs. Whether it's designing systems for Greenfield facilities, or integrating into existing industrial IT environments, our highly-trained staff lifts the design burden from your shoulders to ours.

We'll consult with you to develop a strategy — or we'll develop and implement your full design — either way our staff is available to you.

Training

Backed by years of meeting and exceeding the needs of a broad range of end-user applications, Belden is ideally suited to offer beginners and networking experts alike the opportunity to expand their understanding of mission-critical industrial networks. Belden has developed a series of training programs that are given by Belden-certified individuals — all experts in industrial networking and cabling.

Technical Support

At Belden, our personnel are poised to assist our customers — ensuring maximum uptime and reliability. And with offices in North America, Asia and Europe, Belden can respond globally.

System Performance

If Belden designs it, we guarantee performance — period. We are committed to ensuring world-class signal connectivity and to significantly improve your operational up-time. All Belden components are "designed" to deliver optimum performance: from connectors, to cable, to routers and switches. Based on this comprehensive product portfolio, we have the necessary industrial solutions DNA to deliver reliability.

For more information on our service and support offering, including our warranties, please go to the Belden web site at **www.belden.com/industrial** to locate a Belden sales representative near you.

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A BELDEN BRAND

The Lumberg Automation™ Brand Sets the Standard for Quality, Reliability and Service.



About Our Solutions

Today, more than ever, manufacturing productivity depends upon seamless data communication and automation systems. Lumberg Automation has assembled one of the most diversified portfolios for industrial connectivity and distributed I/O systems for control applications.

With the advancements in technology and improved machine designs, industrial controls, such as sensors, actuators, safety light curtains, pushbutton switches and the like are moving closer to the application.

Our Enclosure~less™ Concept

The Enclosure~less concept from Lumberg Automation addresses these applications with an entire suite of industrial hardened connectivity and distributed I/O products.

Enhanced environmental characteristics, modular designs, plug-and-play electronics with quick-disconnect designs are all integrated to increase speed of installation, decrease troubleshooting and maintenance while reducing the overall complexity of the control application. These products provide the optimal solution in machine and equipment design and offer excellent opportunities and benefits to OEMs, system integrators, and end users alike.

Easing the Design Process

Our system approach leads to decreased time and money to develop complete integrated connectivity solutions. Using our Enclosure~less concept is one of the most effective ways to dramatically reduce the design time.

Re-Useable Solutions

OEM's now have access to a set of standard products designed around the concept that everything is pluggable and interchangeable.

Having the flexibility to re-configure or expand an existing system without worrying about customization is made possible with our Enclosure~less concept. Most importantly, our products are re-usable and can be adapted to future designs or merely put back on the shelf for future use.

Improved Installation Time with Less Mistakes

A recent study by a group of European manufacturers concluded that Enclosure~less assembly costs save as much as 30 percent over conventional installation methods.

These savings are realized through not only the Enclosure~less concept, but by the technology that is being employed. With a modular design approach and plug-and-play electronic features, less time will be spent running down errors or replacing parts from incorrect wiring.

Trouble-Shooting is Simplified

Troubleshooting circuits can be a long process, especially when one is dealing with several hundred termination points.

Many of our products have integrated LED function indicators which provide a visual notification that a circuit is functioning properly.

By using products that have integrated LED functions, mechanics and engineers alike can quickly isolate and resolve the problem.

Testing Made Simple

OEMs can cost-effectively build and pre-test a machine at their facility, disassemble and transport it to an end user's plant knowing that everything has been tested. This is primarily made possible through the reduction of wiring terminations throughout the system, which makes testing a much simpler and quicker process.

Reliability is Maximized

Enclosure~less™ solutions can minimize wiring errors because wiring is pre-manufactured with quick-disconnect features. With less manual wiring involved, there are fewer points of failure.

Some studies suggest that a large portion of system failures come from installation rather than part failures. The decrease in errors associated with pre-manufactured wiring leads to an increase in the overall reliability of the control system.

In the end, this helps speed installation and commissioning, maintenance, troubleshooting, and ultimately boosts a plant's production.

Maintenance/Repair Time is Reduced

Maintenance technicians and operators no longer need to access the control panel since much of the maintenance and troubleshooting can be done outside.

With the simplicity of wiring layout and connections, end users can efficiently isolate problems and replace a starter or I/O locally, rather than sorting through a complex panel. The result is significantly easier troubleshooting and shorter Mean-Time-To-Repair (MTTR).

Floor Space at a Premium

Control cabinets can occupy a substantial amount of the production floor. The Enclosure~less™ concept dramatically reduces the need for that real estate, allowing companies to leverage more of their facility.

Industries like semiconductor and pharmaceutical manufacturing have realized the benefits of the On-Machine approach for years, as their clean-room space is at a premium.



Table of Contents

Table of Contents

About Belden® Industrial Solutions 3
About Our Solutions 4
DeviceNet Introduction 6-7
DeviceNet Connecting Information 8-11

DeviceNet Fieldbus Solutions 12-94

DeviceNet Input/Output Modules 12-41
8 Inputs 12-13
8 Inputs / 8 Outputs (Universal) 14-15
16 Inputs 16-25
8 Outputs 26-29
16 Outputs 30-33
8 Inputs / 8 Outputs 34-37
16 Outputs 38-39
Passive Distribution Box for Trunk and Drop 40-41

DeviceNet Single and Double Ended Cordsets 42-54
Thin Cables 42-45
Thin High-Flex Cables 46-49
Thick Cables 50-51
Type V Trunk Cables 52-53
Power Supply Cables 54

DeviceNet Terminating Resistors 55

DeviceNet T-Connectors 56-65

DeviceNet Receptacles 66-81

DeviceNet Field Attachable Connectors 82-87

Accessories 88

References - Cable Index 89

References - DeviceNet Module Conversion Cross Reference Table 90

Part Number Index 91-94

DeviceNet™

DeviceNet Modules with Plug-N-Play Connectivity Reduce Overall Installation and Maintenance Costs.

DeviceNet Introduction

Common Industrial Protocol

DeviceNet™ is part of the CIP protocol family. CIP stands for "Common Industrial Protocol". It is the platform for several communication protocols including DeviceNet, EtherNet/IP and CompoNet, as well as protocol enhancements for safety applications (CIP Safety) and motion control (CIP Motion).

DeviceNet™ is a fieldbus system for the direct connection of sensors and actuators in the field (e.g. proximity switches, motor starters, valves, etc.). DeviceNetTM originated in the North-American market and is presently used worldwide in all areas of plant automation.

DeviceNet™ is based on the **CAN** specifications (**C**ontroller **A**rea **N**etwork). However, unlike CAN it is restricted in functionality for easier implementation.

About Lumberg Automation DeviceNet Products

To ensure the best application of DeviceNet in the decentralized sector, components must meet maximum electromechanical demands. DeviceNet components from Lumberg Automation offer maximum protection to the electronic system by the material used for the housing and sealing technology. The modules are equipped with either 7/8" or M12 connectors for the bus connection.

Technical Data

Transmission media The individual stations are generally connected via a hybrid cable to transmit data (according to RS485) and for power supply (module electronics and sensors). It is constructed of 2 twisted and shielded pairs of wires contained inside another 360° shielding. There are four standardized types of cable:

- **THICK Cable** - sometimes called Trunk Cable
- **MID Cable**
- **THIN** Cable - sometimes called Drop cable
- **Type V Cable** - used for Tray Rated Cable (TC) applications



DeviceNet Module dipicted with 7/8" bus connection and terminating resistor.

Network Topology

Line structure with drop lines. The trunk line is terminated by resistors on both ends; the drop lines do not require a terminating resistor.

Bus Access

DeviceNet is a multi-master system. The communication between the participants can be implemented in various modes:

- Polled I/O Message Connection: The data of the slaves is cyclically polled by the master (masterslave method).
- Explicit Message Connection: Acyclic communication between master and slave e.g. for parameterization.
- Bit Strobed I/O Message Connection: (broadcast) The master simultaneously sends a message to all slaves and the slaves send their input information back.
- Change of state / Cyclic Message Connection: In the change-of-state mode the slave automatically sends its current data to the master in case of a change at the input. In the cyclic message mode the slave sends the applicable input information at regular, predefined intervals (e.g. every 25 ms).



Modes can be set individually for each slave. The CSMA/BA process is applied to avoid telegram collisions on the bus. It ensures that messages of high priority (e.g. input data telegrams) are transmitted before messages of low priority (e.g. parametric data).

Number of Participants

64 nodes (including master)

Admissible Transmission Rates and Line Lengths

Depending on the transmission rate (Baud rate) the admissible cable lengths (main and drop lines) change as specified in Table 1: Admissible transmission rates and line lengths.

Bus Cycle Time

The bus cycle time depends on the following important factors – among others:

- Number of participants
- The relevant amount of data of the individual slaves
- Type of communication
- Transmission rate

Configuration of the Nodes

The individual participants are configured via EDS files (Electronic Data Sheet) which are provided by the manufacturer for each slave. The EDS files for the Lumberg Automation bus modules can be obtained through **www.lumberg-automationusa.com**.

Addressing

Addressing is implemented via software or rotary address switches. Software addressing can be implemented via addressing tools or the master. The modules are integrated consecutively into the network and automatically checked / tested to determine whether another participant is on the bus with the same address. If that is the case, the participant deactivates itself. If the test is negative, the unit can be addressed via the master.

Diagnostic System

With DeviceNet, the diagnostic message is transported via additional input bytes (status bytes) which are added to the input data Lumberg Automation compact I/O modules are using one status byte. In addition LED's on the modules make it easy to locate an error.

Transmission Rate	125 kbit/s	250 kbit/s	500 kbit/s
Max. Trunk line using “THICK Cable”	500 m (1,640 ft.)	250 m (820 ft.)	100 m (328 ft.)
Max. Trunk line using “MID Cable”	300 m (984 ft.)	250 m (820 ft.)	100 m (328 ft.)
Max. Trunk line using “THIN Cable”	100 m (328 ft.)	100 m (328 ft.)	100 m (328 ft.)
Max. Trunk line using “Type V Cable”	420m (1,378 ft.)	200 m (656 ft.)	100 m (328 ft.)
Max. drop length	6 m (20 ft.)	6 m (20 ft.)	6 m (20 ft.)
Max. cumulative drop length	156 m (512 ft.)	78 m (256 ft.)	39 m (128 ft.)

Table 1: Admissable transmission rates and line lengths

Product Characteristics

- Especially suitable for robotic applications (resistance to torsion).
- Very good resistance to oils, coolants and lubricants as well as emulsions.
- Suitable for use in C-Tracks.
- Very good resistance to flying weld slag (e.g.) unfinished constructions).
- Very good resistance to acids, lye and chemical cleaning agents.
- Very good electromagnetic resistance (EMC) and shieldedsystems.
- Very good vibration and shock resistance.
- UL approved.
- UL/CSA approved.



Module dipicted with M12” bus connection and on-board 7/8” power auxillary power connection with T-Connector.

DeviceNet Connecting Information



DeviceNet I/O Module Shown:
0930 DSL 114

Power Supply for Actuator System, 7/8" Male Connector, 3 Poles



Best Part Number
RKC 30/9
or
RKC 30/11

Description
Field attachable female connector



Best Part Number
0906 UTP 311

Description
T-Connector to daisy chain the power supply



Best Part Number
RK 30-695/...M

Description
Single ended, 3 pole 7/8" power supply cable

Bus Connection, Bus Input, M12 Male Connector, 5-Poles



Best Part Number
0936 DFC 101

Description
Field attachable female connector



Best Part Number
0939 CTX 106

Description
Terminating resistor, female



Best Part Number
0906 UTP 101

Description
T-connector to maintain the bus communication when changing a module respectiveley for intermediate feeding of the power supply.



Best Part Number
0906 UTP 302

Description
T-connector for connection of trunk cables with 7/8" connectors.



Best Part Number
0935 614 103/...M
0935 614 105/...M

Description
DeviceNet Micro (M12) drop cables.

Bus Connection, Bus Output, M12 Female Connector, 5-Poles



Best Part Number
0936 DMC 101

Description
Field attachable male connector



Best Part Number
0939 CTX 105

Description
Terminating resistor, male



Best Part Number
0935 614 103/...M
0935 614 104/...M

Description
DeviceNet Micro (M12) drop cables.



DeviceNet Connecting Information



DeviceNet I/O Module Shown:
0930 DSL 315

Power Supply for Actuator System, 7/8" Male Connector, 3 Poles



Best Part Number
RKC 30/9
or
RKC 30/11

Description
Field attachable female connector



Best Part Number
0906 UTP 311

Description
T-Connector to daisy chain the power supply



Best Part Number
RK 30-695/...M

Description
Single ended, 3 pole 7/8" power supply cable

Bus Connection, Bus Input 7/8" Male Connector, 5-Poles



Best Part Number
0936 DFC 301
0936 DFC 302
0936 DFC 303

Description
Field Attachable, Female Connector, 5-Pole, PG9, PG11, and PG16 Threads



Best Part Number
0939 CTX 304

Description
Terminating Resistor, 7/8" Female, 5-Pole



Best Part Number
0906 UTP 301

Description
T-Connector, to maintain the bus communication when changing a module respectiveley for intermediate feeding of the Power Supply.



Best Part Number
0935 613 301/...M

Description
DeviceNet Double-Ended Drop Cable (**THICK**) Male to Female 7/8" connector on both sides.

0935 613 303/...M

DeviceNet Single-Ended Drop Cable with Female 7/8" Connector on OneSide (**not shown**)



Best Part Number
0935 614 301/...M

Description
DeviceNet Double-Ended Drop Cable (**THIN**) Male to Female7/8" connector on both sides.

0935 614 303/...M

DeviceNet Single-Ended Drop Cable with Female 7/8" Connector on One Side (**not shown**)

Bus Connection, Bus Output, M12 Female Connector, 5-Poles



Best Part Number
0936 DMC 301
0936 DMC 302
0936 DMC 303

Description
Field Attachable, Male Connector, 5-Pole, PG9, PG11, and PG16 Threads



Best Part Number
0939 CTX 303

Description
Terminating Resistor, 7/8" Male, 5-Pole



Best Part Number
0935 613 301/...M

Description
DeviceNet Double-Ended Drop Cable (**THICK**) Male to Female 7/8" connector on both sides.

0935 613 303/...M

DeviceNet Single-Ended Drop Cable with Female 7/8" Connector on OneSide (**not shown**)



Best Part Number
0935 614 301/...M

Description
DeviceNet Double-Ended Drop Cable (**THIN**) Male to Female7/8" connector on both sides.

0935 614 303/...M

DeviceNet Single-Ended Drop Cable with Female 7/8" Connector on One Side (**not shown**)

DeviceNet™

DeviceNet Connecting Information





DeviceNet I/O Module Shown:
0930 DSL 700

Power Supply for Actuator System, 7/8" Male Connector, 4 Poles



Best Part Number	Description
RSC 40/9	Field Attachable, Male Connector, 4-Pole, PG9 Threads
or	
RSC 40/11	Field Attachable, Male Connector, 4-Pole, PG11 Threads



Best Part Number	Description
RKC 40/9	Field Attachable, Female Connector, 4-Pole, PG9 Threads
or	
RKC 40/11	Field Attachable, Female Connector, 4-Pole, PG11 Threads



Best Part Number	Description
RK 40-639/...F	Single-Ended 4-Pole 7/8" Power Supply Cable.

Bus Connection, Bus-Input 7/8" Male Connector, 5-Poles



Best Part Number	Description
0936 DFC 301 **0936 DFC 302** **0936 DFC 303**	Field Attachable, Female 7/8" Connector, 5-Pole, PG9, PG11, or PG16 Threads



Best Part Number	Description
0939 CTX 304	Terminating Resistor, 7/8" Female, 5-Pole



Best Part Number	Description
0906 UTP 301	T-Connector, to maintain the bus communication when changing a module respectiveley for intermediate feeding of the Power Supply.



Best Part Number	Description
0935 613 301/...M	DeviceNet Double-Ended Drop Cable (**THICK**) Male to Female 7/8" connector on both sides.
0935 613 303/...M	DeviceNet Single-Ended Drop Cable with Female 7/8" Connector on OneSide (**not shown**)



Best Part Number	Description
0935 614 301/...M	DeviceNet Double-Ended Drop Cable (**THIN**) Male to Female7/8" connector on both sides.
0935 614 303/...M	DeviceNet Single-Ended Drop Cable with Female 7/8" Connector on One Side (**not shown**)

Bus Connection, Bus-Out M12 Female Connector, 5-Poles



Best Part Number	Description
0936 DMC 301 **0936 DMC 302** **0936 DMC 303**	Field Attachable, Male Connector, 5-Pole, PG9, PG11, and PG16 Threads



Best Part Number	Description
0939 CTX 303	Terminating Resistor, 7/8" Male, 5-Pole



Best Part Number	Description
0935 613 301/...M	DeviceNet Double-Ended Drop Cable (**THICK**) Male to Female 7/8" connector on both sides.
0935 613 303/...M	DeviceNet Single-Ended Drop Cable with Female 7/8" Connector on OneSide (**not shown**)



Best Part Number	Description
0935 614 301/...M	DeviceNet Double-Ended Drop Cable (**THIN**) Male to Female7/8" connector on both sides.
0935 614 303/...M	DeviceNet Single-Ended Drop Cable with Female 7/8" Connector on One Side (**not shown**)



DeviceNet Connecting Information



DeviceNet I/O Module Shown:
0930 DSL 650

Bus Connection. Bus Input M12, 5-Pole Male Connector



Best Part Number 0936 DFC 101
Description Field Attachable, Female Connector, 5-Pole, PG9 Threads



Best Part Number 0939 CTX 106
Description Terminating Resistor, Female, 5-Pole



Best Part Number 0906 UTP 101
Description T-Connector, to Maintain the Bus Communication when Changing a Module Respectiveley for Intermediate Feeding of the Power Supply.



Best Part Number 0906 UTP 302
Description T-Connector for Connection of Trunk Cables with M12" Female and 7/8" Male and Female Connectors.



Best Part Number 0935 614 103/...M
Description DeviceNet Double-Ended Drop Cable, M12 Male to Female.

Best Part Number 0935 614 105/...M
DeviceNet Single-Ended Drop Cable with M12 Female Connector on One Side (**not shown**)

Power Supply for Actuator System, M12, 5-Pole Male Connector



Best Part Number 0936 DFC 101
Description Field Attachable, M12 Female Connector, 5-Pole, PG9 Threads



Best Part Number 0906 UTP 101
Description T-Connector, for Daisy-Chaining Power



Best Part Number RKT 5-612/...M
Description Single-Ended Cordset, M12, 5-Pole for Connection to Power Supply.

Bus Connection. Bus Output, M12, 5-Pole Female Connector



Best Part Number 0936 DMC 101
Description Field Attachable, M12, Male Connector, 5-Pole, PG9 Threads



Best Part Number 0939 CTX 105
Description Terminating Resistor, M12, Male, 5-Pole



Best Part Number 0935 614 103/...M
Description DeviceNet Double-Ended Drop Cable, M12 Male to Female, 5-pole.

Best Part Number 0935 614 104/...M
DeviceNet Single-Ended Drop Cable with M12 Male Connector on One Side (**not shown**)

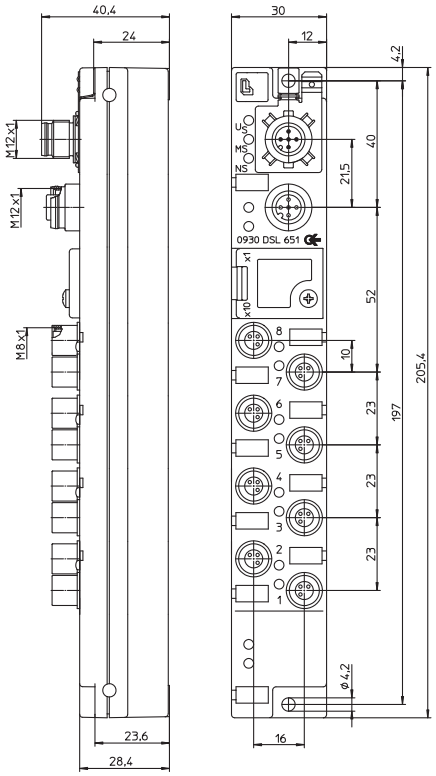
DeviceNet I/O Modules with 8-Digital Inputs

0930 DSL 651



8 IN

DeviceNet device with 8 digital inputs to connect standard sensors, M8 socket, 3 poles, rotary switches for addressing, M12 bus connection.



Bit Assignment

Bit	7	6	5	4	3	2	1	0
	M8 Input							
Byte 0	8	7	6	5	4	3	2	1
	Diagnostic							
DIA-Byte	S8	S7	S6	S5	S4	S3	S2	S1

S1...8: Socket Status 1...8

Diagnostic Indication

LED	Indication	Condition
1...8	yellow	channel status
1...8	red	periphery fault
U_S	green	sensor/system power supply
U_L	green	actuator power supply
MS	green	device is ready for operating
(Module status)	green flashing	wrong configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection M12



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L

Input M8



1 = +24 V
3 = GND (0 V)
4 = In

1 = system/sensors



DeviceNet I/O Modules with 8-Digital Inputs

0930 DSL 651

Technical Data

Environmental	
Degree of protection	IP 67
Operating temperature range	-10°C (+14°F) to +60°C (+140°F)
Mechanical	
Weight	190 g
Housing material	PBT
Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec
System power supply	
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	60 mA
Reverse polarity protection	yes
Input power supply	**Us**
Voltage range min.	(U_{System} - 1.5 V)
Sensor current	100 mA (at T_{amb} 30°C) per socket
Short circuit-proof	yes
Indication	LED green
Inputs	**Type 3 acc. to IEC 61131-2**
Rated input voltage	24 V DC
Channel type N.O.	p-switching
Number of digital channels	max. 8
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per channel
Included in delivery/accessories	
Dust covers M8	2 pieces
Attachable labels	10 pieces

NOTE: EDS-files can be downloaded from our website
http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml

Part Number
0930 DSL 651

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

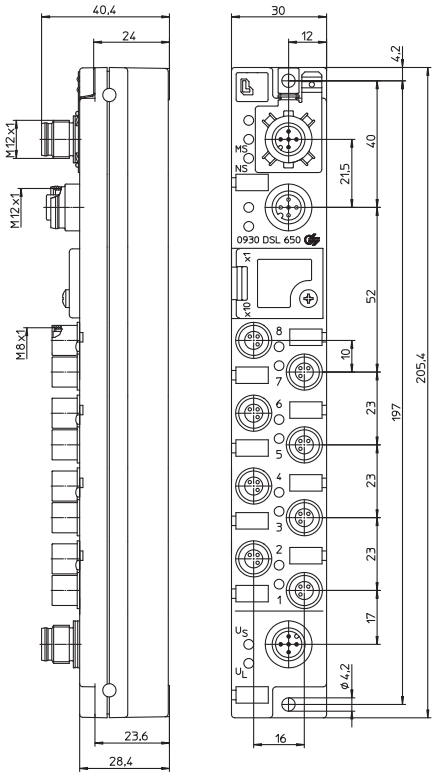
DeviceNet I/O Modules with 8-Digital Inputs and 8-Digital Outputs

0930 DSL 650



8 IN / 8 OUT (universal)

DeviceNet device with 8 digital I/O channels, channels can be used universally as inputs or outputs, M8 socket, 3 poles, rotary switches for addressing, M12 bus connection, M12 actuator supply.



Bit Assignment

Bit	7	6	5	4	3	2	1	0
M8 Input								
Byte 0	8	7	6	5	4	3	2	1
Diagnostic								
DIA-Byte	S8	S7	S6	S5	S4	S3	S2	S1
S1...8: Socket Status 1...8								
M8 Output								
Byte 0	8	7	6	5	4	3	2	1

Diagnostic Indication

LED	Indication	Condition
1...8	yellow	channel status
1...8	red	periphery fault
Us	green	sensor/system power supply
UL	green	actuator power supply
MS	green	device is ready for operating
(Module status)	green flashing	wrong configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection M12



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L
housing = earth

Actuator supply M12



1 = +24 V [2]
2 = + 24 V [3]
3 = GND (0 V) [2]
4 = GND (0 V) [3]
5 = earth

Input/Output M8



1 = +24 V
3 = GND (0 V)
4 = In

1 = system: galvanically separated to sensors/actuators
2 = actuators
3 = sensors



DeviceNet I/O Modules with 8-Digital Inputs and 8-Digital Outputs

0930 DSL 650

Technical Data

Environmental	
Degree of protection	IP 67
Operating temperature range	-10°C (+14°F) to +60°C (+140°F)
Mechanical	
Weight	200 g
Housing material	PBT
Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec
System power supply	
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	60 mA
Reverse polarity protection	yes
Input power supply	**Us**
Voltage range min.	(U_{System} - 1.5 V)
Sensor current	100 mA (at T_{amb} 30°C) per socket
Short circuit-proof	yes
Indication	LED green
Inputs	**Type 3 acc. to IEC 61131-2**
Rated input voltage	24 V DC
Channel type N.O.	p-switching
Number of digital channels	max. 8
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per channel
Output power supply	**UL**
Rated voltage	24 V DC
Voltage range	19–30 V DC
Reverse polarity protection	yes/antiparallel diode
Indication	LED green
Outputs	
Rated output current	0.5 A per channel
Short circuit-proof	yes
Max. output current	4 A per module
Overload-proof	yes
Number of digital channels	max. 8
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per channel
Included in delivery/accessories	
Dust covers M8	2 pieces
Attachable labels	10 pieces

NOTE: EDS-files can be downloaded from our website **http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml**

Part Number
0930 DSL 650

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet

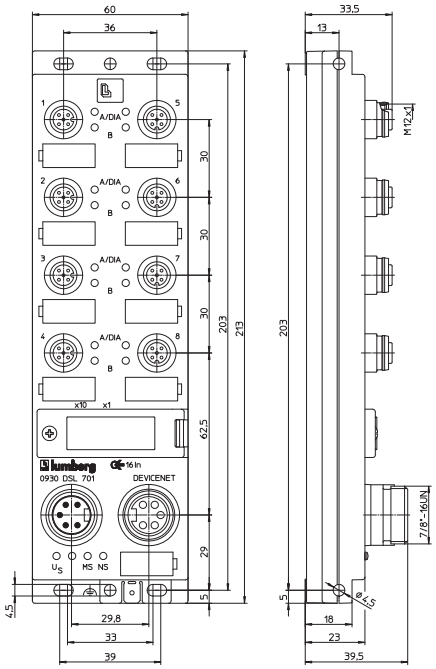
DeviceNet I/O Modules with 16-Digital Inputs

0930 DSL 701



16 IN

DeviceNet device with 16 digital inputs to connect standard sensors, M12 socket, rotary switches for addressing, 7/8" bus connection.



Bit Assignment

Bit	7	6	5	4	3	2	1	0
M12 Input								
Byte 0	4B	4A	3B	3A	2B	2A	1B	1A
Byte 1	8B	8A	7B	7A	6B	6A	5B	5A
Diagnostic								
Byte 2	S8	S7	S6	S5	S4	S3	S2	S1

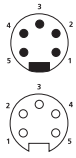
S1...8: Socket Status 1...8

Diagnostic Indication

LED	Indication	Condition
1...8 A/B	yellow	channel status
1...8 A/DIA	red	periphery fault
Us	green	sensor power supply
MS	green	device is ready for operating
(Module status)	green flashing	wrong configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection 7/8"



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L
housing = earth

Input M12



1 = +24 V
2 = IN B
3 = GND (0 V)
4 = In A
5 = earth

1 = system/sensors



DeviceNet I/O Modules with 16-Digital Inputs

0930 DSL 701

Technical Data

Environmental	
Degree of protection	IP 67
Operating temperature range	-10°C (+14°F) to +60°C (+140°F)
Mechanical	
Weight	380 g
Housing material	PBT
Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec
System power supply	
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	100 mA
Reverse polarity protection	yes
Input power supply	**Us**
Voltage range min.	(U_{System} - 1.5 V)
Sensor current	200 mA (at T_{amb} 30°C) per socket
Short circuit-proof	yes
Indication	LED green
Inputs	**Type 3 acc. to IEC 61131-2**
Rated input voltage	24 V DC
Channel type N.O.	p-switching
Number of digital channels	max. 16
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per channel
Included in delivery/accessories	
Dust covers M12	4 pieces
Attachable labels	10 pieces

NOTE: EDS-files can be downloaded from our website
http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml

Part Number
0930 DSL 701

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet

DeviceNet I/O Modules with 16-Digital Inputs

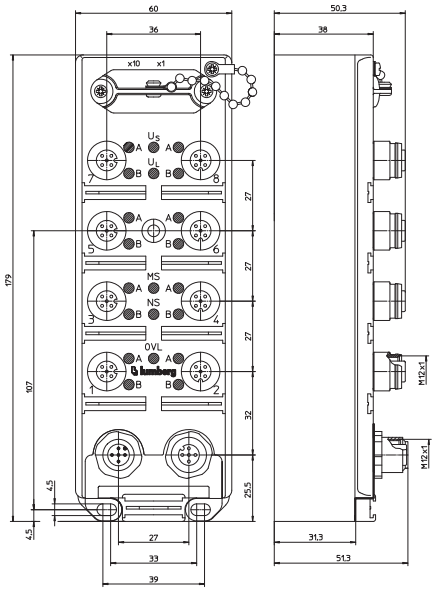
0930 DSL 108



16 IN (p)

DeviceNet device with16 digital inputs (p-switching) to connect standard sensors, M12 socket, rotary switches for addressing, M12 bus connection.

– Replaced 0930 DSL 101 –



Bit Assignment

Bit	7	6	5	4	3	2	1	0
M12 Input								
Byte 0	8A	7A	6A	5A	4A	3A	2A	1A
Byte 1	8B	7B	6B	5B	4B	3B	2B	1B
Diagnostic: Input								
Byte 2	OVL	-	-	-	-	-	-	-

OVL: Overload status

Diagnostic Indication

LED	Indication	Condition
1...8 A/B	yellow	channel status
Us	green	sensor power supply
UL	green	system power supply
OVL	red	sensor short-circuit / sensor overload
MS	green	device is ready for operating
(Module status)	green flashing	incorrect or incomplete configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection M12



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L

Input M12



1 = +24 V
2 = IN B
3 = GND (0 V)
4 = In A
5 = earth

1 = system/sensors



DeviceNet I/O Modules with 16-Digital Inputs

0930 DSL 108

Technical Data

Environmental

Degree of protection	IP 67
Operating temperature range	-0°C (+32°F) to +60°C (+140°F)

Mechanical

Weight	570 g
Housing material	PUR

Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Autobaud	yes
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec

Electronics power supply	**UL**
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	max. 80 mA
Reverse polarity protection	yes
Indication	LED green

Input power supply	**Us**
Voltage range min.	(U_{System} - 1.5 V)
Sensor current	max. 800 mA
Short circuit-proof	yes
Indication	LED green

Inputs	**Type 2 acc. to IEC 61131-2**
Rated input voltage	24 V DC
Signal state “1”	11–30 V
Signal state “0”	-3–5 V
Input current at 24 V	10 mA
Channel type N.O.	p-switching
Number of digital channels	16
Channel status indicator	LED yellow per channel

Included in delivery/accessories

Dust covers M12	2 pieces
Attachable labels	10 pieces

Communication modes

Polled I/O message connection
Change of state/ cyclic message connection
Explicit message connection

NOTE: EDS-files can be downloaded from our website
http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml

Part Number
0930 DSL 108

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet

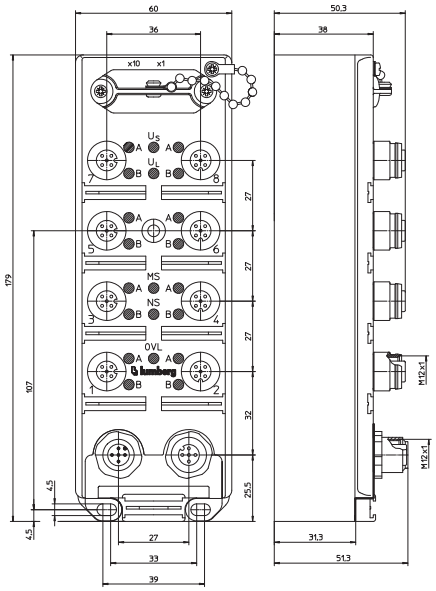
DeviceNet I/O Modules with 16-Digital Inputs

0930 DSL 109



16 IN (n)

DeviceNet device with 16 digital inputs (n-switching) to connect standard sensors, M12 socket, rotary switches for addressing, M12 bus connection.



Bit Assignment

Bit	7	6	5	4	3	2	1	0
M12 Input								
Byte 0	8A	7A	6A	5A	4A	3A	2A	1A
Byte 1	8B	7B	6B	5B	4B	3B	2B	1B
Diagnostic: Input								
Byte 2	OVL	-	-	-	-	-	-	-

OVL: Overload status

Diagnostic Indication

LED	Indication	Condition
1...8 A/B	yellow	channel status
Us	green	sensor power supply
UL	green	system power supply
OVL	red	sensor short-circuit / sensor overload
MS	green	device is ready for operating
(Module status)	green flashing	incorrect or incomplete configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection M12



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L

Input M12



1 = +24 V
2 = IN B
3 = GND (0 V)
4 = In A
5 = earth

1 = system/sensors



DeviceNet I/O Modules with 16-Digital Inputs

0930 DSL 109

Technical Data

Environmental	
Degree of protection	IP 67
Operating temperature range	-0°C (+32°F) to +60°C (+140°F)
Mechanical	
Weight	570 g
Housing material	PUR
Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
AutobaUd	yes
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec
Electronics power supply	**UL**
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	max. 80 mA
Reverse polarity protection	yes
Indication	LED green
Input power supply	**Us**
Voltage range min.	(U_{System} - 1.5 V)
Sensor current	max. 800 mA
Short circuit-proof	yes
Indication	LED green
Inputs	
Rated input voltage	24 V DC
Signal state “1”	< (US - 11V)
Signal state “0”	> (Us - 5 V)
Input current at 6 V	-10 mA
Channel type N.O.	n-switching
Number of digital channels	16
Channel status indicator	LED yellow per channel

Included in delivery/accessories

Dust covers M12	2 pieces
Attachable labels	10 pieces

Communication modes

Polled I/O message connection
Change of state/ cyclic message connection
Explicit message connection

NOTE: EDS-files can be downloaded from our website
http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml

Part Number
0930 DSL 109

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet

DeviceNet I/O Modules with 16-Digital Inputs

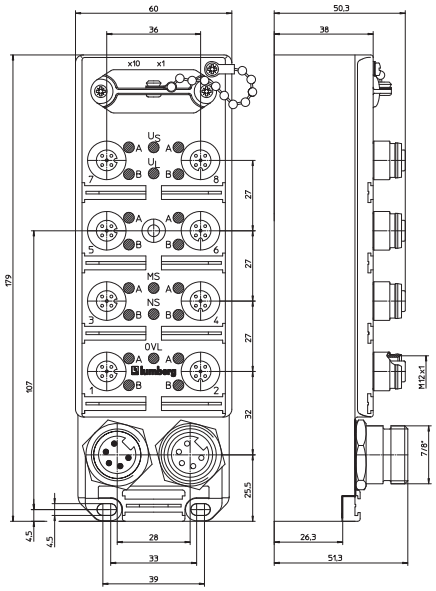
0930 DSL 312



16 IN (p)

DeviceNet device with 16 digital inputs (p-switching) to connect standard sensors, M12 socket, rotary switches for addressing, 7/8" bus connection.

– Replaced 0930 DSL 301 and 0930 DSL 301 –



Bit Assignment

Bit	7	6	5	4	3	2	1	0
M12 Input								
Byte 0	8A	7A	6A	5A	4A	3A	2A	1A
Byte 1	8B	7B	6B	5B	4B	3B	2B	1B
Diagnostic: Input								
Byte 2	OVL	-	-	-	-	-	-	-

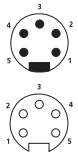
OVL: Overload status

Diagnostic Indication

LED	Indication	Condition
1...8 A/B	yellow	channel status
Us	green	sensor power supply
UL	green	system power supply
OVL	red	sensor short-circuit / sensor overload
MS	green	device is ready for operating
(Module status)	green flashing	incorrect or incomplete configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection 7/8"



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L

Input M12



1 = +24 V
2 = IN B
3 = GND (0 V)
4 = In A
5 = earth

1 = system/sensors



DeviceNet I/O Modules with 16-Digital Inputs

0930 DSL 312

Technical Data

Environmental

Degree of protection	IP 67
Operating temperature range	-0°C (+32°F) to +60°C (+140°F)

Mechanical

Weight	570 g
Housing material	PUR

Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Autobaud	yes
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec

Electronics power supply	**UL**
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	max. 800 mA
Reverse polarity protection	yes
Indication	LED green

Input power supply	**Us**
Voltage range min.	(U_{System} - 1.5 V)
Sensor current	max. 800 mA
Short circuit-proof	yes
Indication	LED green

Inputs	**Type 2 acc. to IEC 61131-2**
Rated input voltage	24 V DC
Signal state “1”	11–30 V
Signal state “0”	-3–5 V
Input current at 24 V	10 mA
Channel type N.O.	p-switching
Number of digital channels	16
Channel status indicator	LED yellow per channel

Included in delivery/accessories

Dust covers M12	2 pieces
Attachable labels	10 pieces

Communication modes

Polled I/O message connection
Change of state/ cyclic message connection
Explicit message connection

NOTE: EDS-files can be downloaded from our website
http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml

Part Number
0930 DSL 312

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet

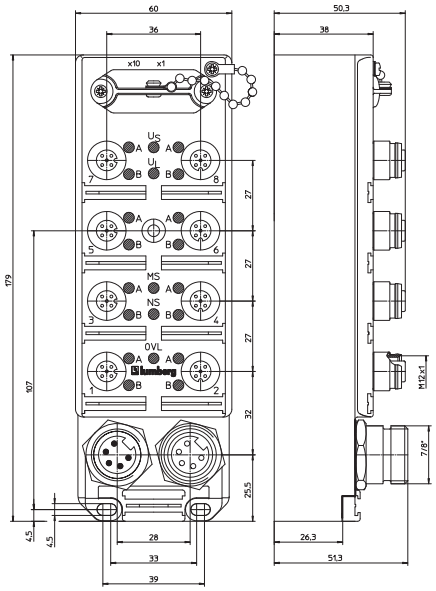
DeviceNet I/O Modules with 16-Digital Inputs

0930 DSL 313



16 IN (n)

DeviceNet device with16 digital inputs (n-switching) to connect standard sensors, M12 socket, rotary switches for addressing, 7/8" bus connection.



Bit Assignment

Bit	7	6	5	4	3	2	1	0
M12 Input								
Byte 0	8A	7A	6A	5A	4A	3A	2A	1A
Byte 1	8B	7B	6B	5B	4B	3B	2B	1B
Diagnostic: Input								
Byte 2	OVL	-	-	-	-	-	-	-

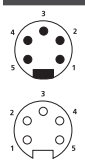
OVL: Overload status

Diagnostic Indication

LED	Indication	Condition
1...8 A/B	yellow	channel status
Us	green	sensor power supply
UL	green	system power supply
OVL	red	sensor short-circuit / sensor overload
MS	green	device is ready for operating
(Module status)	green flashing	incorrect or incomplete configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection 7/8"



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L

Input M12



1 = +24 V
2 = IN B
3 = GND (0 V)
4 = In A
5 = earth

1 = system/sensors



DeviceNet I/O Modules with 16-Digital Inputs

0930 DSL 313

Technical Data

Environmental

Degree of protection	IP 67
Operating temperature range	-0°C (+32°F) to +60°C (+140°F)

Mechanical

Weight	570 g
Housing material	PUR

Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Autobaud	yes
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec

Electronics power supply	**UL**
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	max. 800 mA
Reverse polarity protection	yes
Indication	LED green

Input power supply	**Us**
Voltage range min.	(U_{System} - 1.5 V)
Sensor current	max. 800 mA
Short circuit-proof	yes
Indication	LED green

Inputs	**Type 2 acc. to IEC 61131-2**
Rated input voltage	24 V DC
Signal state “1”	< (Us - 11 V)
Signal state “0”	> (Us - 5 V)
Input current at 24 V	-10 mA
Channel type N.O.	n-switching
Number of digital channels	16
Channel status indicator	LED yellow per channel

Included in delivery/accessories

Dust covers M12	2 pieces
Attachable labels	10 pieces

Communication modes

Polled I/O message connection
Change of state/ cyclic message connection
Explicit message connection

NOTE: EDS-files can be downloaded from our website
http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml

Part Number
0930 DSL 313

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet

DeviceNet I/O Modules with 8-Digital Outputs

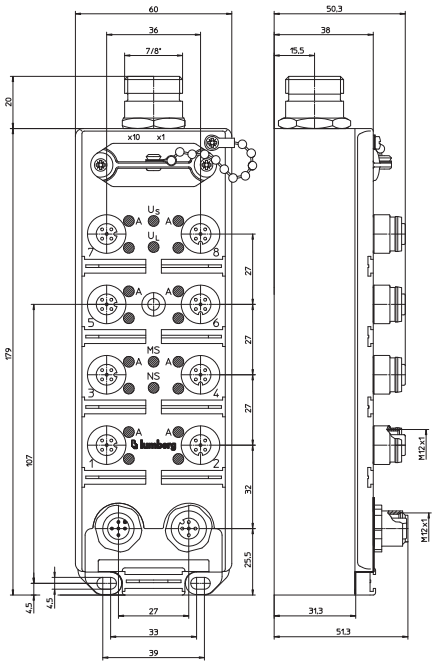
0930 DSL 107



8 OUT

DeviceNet device with 8 digital outputs (2 A) to connect standard actuators, M12 socket, rotary switches for addressing, M12 bus connection, 7/8" actuator supply.

– Replaced 0930 DSL 103 –



Bit Assignment

Bit	7	6	5	4	3	2	1	0
Diagnostic: Input								
Byte 0	-	-	-	-	-	-	ASC	UVA
M12 Output								
Byte 0	8	7	6	5	4	3	2	1

ASC: Actuator short-circuit
UVA: Undervoltage actuator

Diagnostic Indication

LED	Indication	Condition
1...8 A	yellow	channel status
1...8	red	actuator short-circuit / actuator overload
Us	green	actuator power supply
UL	green	system power supply
OVL	red	sensor short-circuit / sensor overload
MS	green	device is ready for operating
(Module status)	green flashing	incorrect or incomplete configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection M12



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L

Actuator supply 7/8"



1 = earth
2 = +24 V
3 = GND (0 V)

Output M12



1 = n.c.
2 = n.c.
3 = GND (0 V)
4 = OUT
5 = earth

1 = system



DeviceNet I/O Modules with 8-Digital Outputs

0930 DSL 107

Technical Data

Environmental	
Degree of protection	IP 67
Operating temperature range	-0°C (+32°F) to +60°C (+140°F)
Mechanical	
Weight	570 g
Housing material	PUR
Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Autobaud	yes
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec
Electronics power supply	**UL**
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	max. 80 mA
Reverse polarity protection	yes
Indication	LED green
Output power supply	**Us**
Rated voltage	24 V DC
Voltage range	19–30 V DC
Potential separation	present
Reverse polarity protection	yes/antiparallel diode
Indication	LED green
Outputs	**Type 2 A acc. to IEC 61131-2**
Rated output current	2 A per channel
Short circuit-proof	yes
Max. output current	12 A
Overload-proof	yes
Number of digital channels	8
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per channel

Included in delivery/accessories

Dust covers M12	2 pieces
Attachable labels	10 pieces

Communication modes

Polled I/O message connection
Change of state/ cyclic message connection
Explicit message connection

NOTE: EDS-files can be downloaded from our website
http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml

Part Number
0930 DSL 107

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet

DeviceNet I/O Modules with 8-Digital Outputs

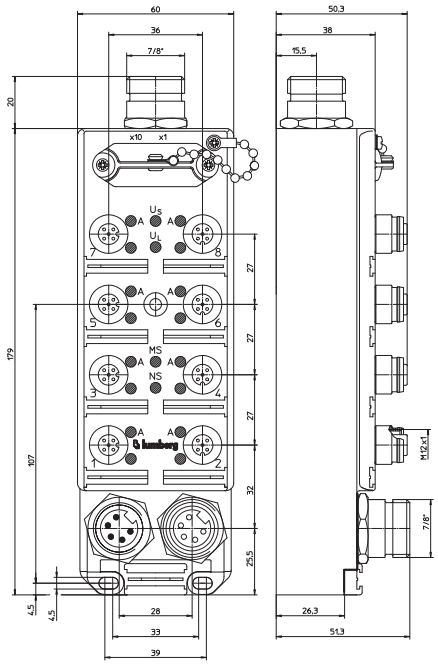
0930 DSL 311



8 OUT

DeviceNet device with 8 digital outputs (2 A) to connect standard actuators, M12 socket, rotary switches for addressing, 7/8" bus connection, 7/8" actuator supply.

– Replaced 0930 DSL 303 and 0930 DSL 306 –



Bit Assignment

Bit	7	6	5	4	3	2	1	0
Diagnostic: Input								
Byte 0	-	-	-	-	-	-	ASC	UVA
M12 Output								
Byte 0	8	7	6	5	4	3	2	1

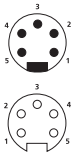
ASC: Actuator short-circuit
UVA: Undervoltage actuator

Diagnostic Indication

LED	Indication	Condition
1...8 A	yellow	channel status
1...8	red	actuator short-circuit / actuator overload
U_S	green	actuator power supply
U_L	green	system power supply
MS	green	device is ready for operating
(Module status)	green flashing	incorrect or incomplete configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection 7/8"



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L

Actuator supply 7/8"



1 = earth
2 = +24 V
3 = GND (0 V)

Output M12



1 = n.c.
2 = n.c.
3 = GND (0 V)
4 = OUT
5 = earth

1 = system



DeviceNet I/O Modules with 8-Digital Outputs

0930 DSL 311

Technical Data

Environmental	
Degree of protection	IP 67
Operating temperature range	-0°C (+32°F) to +60°C (+140°F)
Mechanical	
Weight	570 g
Housing material	PUR
Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Autobaud	yes
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec
Electronics power supply	**UL**
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	max. 80 mA
Reverse polarity protection	yes
Indication	LED green
Output power supply	**Us**
Rated voltage	24 V DC
Voltage range	19–30 V DC
Potential separation	present
Reverse polarity protection	yes/antiparallel diode
Indication	LED green
Outputs	**Type 2 A acc. to IEC 61131-2**
Rated output current	2 A per channel
Short circuit-proof	yes
Max. output current	12 A
Overload-proof	yes
Number of digital channels	8
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per channel

Included in delivery/accessories

Dust covers M12	2 pieces
Attachable labels	10 pieces

Communication modes

Polled I/O message connection
Change of state/ cyclic message connection
Explicit message connection

NOTE: EDS-files can be downloaded from our website
http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml

Part Number
0930 DSL 311

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

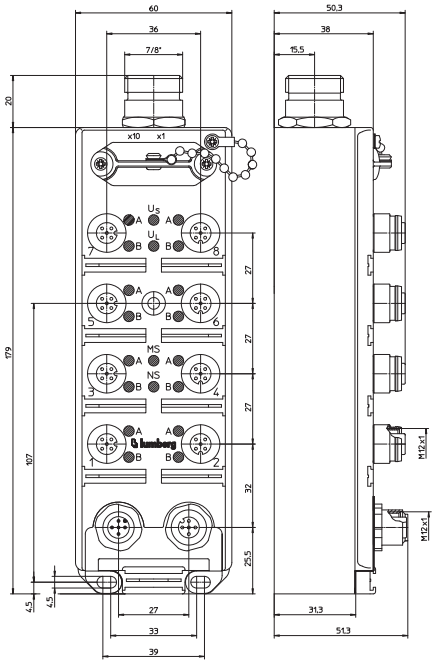
DeviceNet I/O Modules with 16-Digital Outputs

0930 DSL 114



16 OUT

DeviceNet device with 16 digital outputs (0.5 A) to connect standard actuators, combined M12 socket, rotary switches for addressing, M12 bus connection, 7/8" actuator supply.



Bit Assignment

Bit	7	6	5	4	3	2	1	0
Diagnostic: Input								
Byte 0	-	-	-	-	-	-	ASC	UVA
M12 Output								
Byte 0	8A	7A	6A	5A	4A	3A	2A	1A
Byte 1	8B	7B	6B	5B	4B	3B	2B	1B

ASC: Actuator short-circuit
UVA: Undervoltage actuator

Diagnostic Indication

LED	Indication	Condition
1...8 A/B	yellow	channel status
1...8 A/B	red	actuator short-circuit / actuator overload
U_S	green	actuator power supply
U_L	green	system power supply
MS	green	device is ready for operating
(Module status)	green flashing	incorrect or incomplete configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection M12



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L

Actuator supply 7/8"



1 = earth
2 = +24 V
3 = GND (0 V)

Output M12



1 = n.c.
2 = OUT B
3 = GND (0 V)
4 = OUT A
5 = earth

1 = system



DeviceNet I/O Modules with 16-Digital Outputs

0930 DSL 114

Technical Data

Environmental	
Degree of protection	IP 67
Operating temperature range	-0°C (+32°F) to +60°C (+140°F)
Mechanical	
Weight	570 g
Housing material	PUR
Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Autobaud	yes
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec
Electronics power supply	**UL**
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	max. 80 mA
Reverse polarity protection	yes
Indication	LED green
Output power supply	**Us**
Rated voltage	24 V DC
Voltage range	19–30 V DC
Potential separation	present
Reverse polarity protection	yes/antiparallel diode
Indication	LED green
Outputs	**Type 0.5 A acc. to IEC 61131-2**
Rated output current	0.7 A per channel
Short circuit-proof	yes
Max. output current	11.2 A
Overload-proof	yes
Number of digital channels	16
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per channel

Included in delivery/accessories

Dust covers M12	2 pieces
Attachable labels	10 pieces

Communication modes

Polled I/O message connection
Change of state/ cyclic message connection
Explicit message connection

NOTE: EDS-files can be downloaded from our website
http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml

Part Number
0930 DSL 114

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet

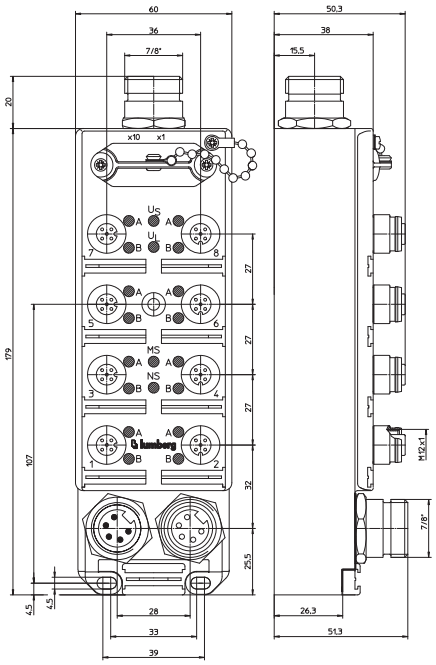
DeviceNet I/O Modules with 16-Digital Outputs

0930 DSL 315



16 OUT

DeviceNet device with16 digital outputs (0.5 A) to connect standard actuators, combined M12 socket, rotary switches for addressing, 7/8" bus connection, 7/8" actuator supply.



Bit Assignment

Bit	7	6	5	4	3	2	1	0
Diagnostic: Input								
Byte 0	-	-	-	-	-	-	ASC	UVA
M12 Output								
Byte 0	8A	7A	6A	5A	4A	3A	2A	1A
Byte 1	8B	7B	6B	5B	4B	3B	2B	1B

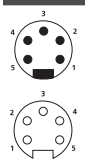
ASC: Actuator short-circuit
UVA: Undervoltage actuator

Diagnostic Indication

LED	Indication	Condition
1...8 A/B	yellow	channel status
1...8 A/B	red	actuator short-circuit / actuator overload
Us	green	actuator power supply
UL	green	system power supply
MS	green	device is ready for operating
(Module status)	green flashing	incorrect or incomplete configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection 7/8"



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L

Actuator supply 7/8"



1 = earth
2 = +24 V
3 = GND (0 V)

Output M12



1 = n.c.
2 = OUT B
3 = GND (0 V)
4 = OUT A
5 = earth

1 = system



DeviceNet I/O Modules with 16-Digital Outputs

0930 DSL 315

Technical Data

Environmental	
Degree of protection	IP 67
Operating temperature range	-0°C (+32°F) to +60°C (+140°F)
Mechanical	
Weight	570 g
Housing material	PUR
Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Autobaud	yes
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec
Electronics power supply	**UL**
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	max. 80 mA
Reverse polarity protection	yes
Indication	LED green
Output power supply	**Us**
Rated voltage	24 V DC
Voltage range	19–30 V DC
Potential separation	present
Reverse polarity protection	yes/antiparallel diode
Indication	LED green
Outputs	**Type 0.5 A acc. to IEC 61131-2**
Rated output current	0.7 A per channel
Short circuit-proof	yes
Max. output current	11.2 A
Overload-proof	yes
Number of digital channels	16
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per channel

Included in delivery/accessories

Dust covers M12	2 pieces
Attachable labels	10 pieces

Communication modes

Polled I/O message connection
Change of state/ cyclic message connection
Explicit message connection

NOTE: EDS-files can be downloaded from our website
http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml

Part Number
0930 DSL 315

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet I/O Modules with 8-Digital Inputs and 8-Digital Outputs

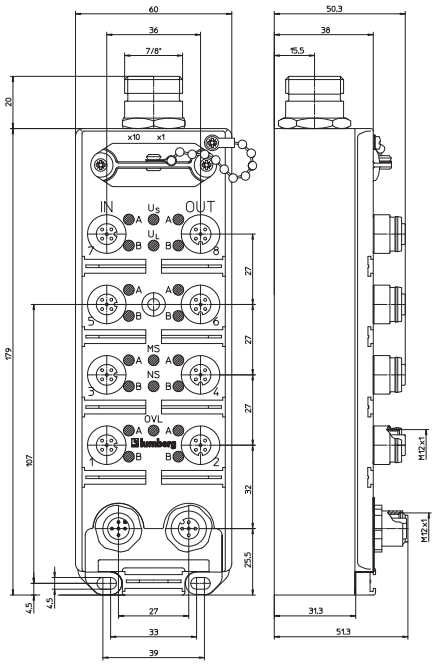
0930 DSL 113



8 IN / 8 OUT

DeviceNet device with 8 digital inputs to connect standard sensors and 8 digital outputs (0.5 A) to connect standard actuators, combined M12 socket, rotary switches for addressing, M12 bus connection, 7/8" actuator supply.

– Replaced 0930 DSL 102 –



Bit Assignment

Bit	7	6	5	4	3	2	1	0
M12 Input								
Byte 0	7B	5B	3B	1B	7A	5A	3A	1A
Diagnostic: Input								
Byte 1	OVL	-	-	-	-	-	ASC	UVA
M12 Output								
Byte 0	8B	6B	4B	2B	8A	6A	4A	2A

OVL: Overload status
ASC: Actuator short-circuit
UVA: Undervoltage actuator

Diagnostic Indication

LED	Indication	Condition
1...8 A/B	yellow	channel status
2, 4, 6, 8 A/B	red	actuator short-circuit / actuator overload
U_S	green	actuator power supply
U_L	green	system power supply
OVL	red	sensor short-circuit / sensor overload
MS	green	device is ready for operating
(Module status)	green flashing	incorrect or incomplete configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection M12



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L

Actuator supply 7/8"



1 = earth
2 = +24 V
3 = GND (0 V)

Input M12



1 = +24 V
2 = IN B
3 = GND (0 V)
4 = IN A
5 = earth

Output M12



1 = n.c.
2 = OUT B
3 = GND (0 V)
4 = OUT A
5 = earth

1 = system/sensors



DeviceNet I/O Modules with 8-Digital Inputs and 8-Digital Outputs

0930 DSL 113

Technical Data

Environmental	
Degree of protection	IP 67
Operating temperature range	-0°C (+32°F) to +60°C (+140°F)
Mechanical	
Weight	570 g
Housing material	PUR
Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Autobaud	yes
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec
Electronics power supply	**UL**
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	max. 80 mA
Reverse polarity protection	yes
Indication	LED green
Input power supply	
Voltage range	min. (UL - 1.5 V)
Total current of all sensors	max. 800 mA
Short circuit-proof	yes
Indication	LED green
Inputs	**Type 2 acc. to IEC 61131-2**
Rated input voltage	24 V DC
Signal state “1”	11–30 V
Signal state “0”	-3–5 V
Input current at 24 V	10 mA
Channel type N.O.	p-switching
Number of digital channels	8
Channel status indicator	LED yellow per channel

Output power supply	**Us**
Rated voltage	24 V DC
Voltage range	19–30 V DC
Potential separation	present
Reverse polarity protection	yes/antiparallel diode
Indication	LED green
Outputs	**Type 0.5 A acc. to IEC 61131-2**
Rated output current	0.7 A per channel
Short circuit-proof	yes
Max. output current	5.6 A
Overload-proof	yes
Number of digital channels	8
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per channel
Included in delivery/accessories	
Dust covers M12	2 pieces
Attachable labels	10 pieces

Communication modes
Polled I/O message connection
Change of state/ cyclic message connection
Explicit message connection

NOTE: EDS-files can be downloaded from our website **http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml**

Part Number
0930 DSL 113

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet I/O Modules with 8-Digital Inputs and 8-Digital Outputs

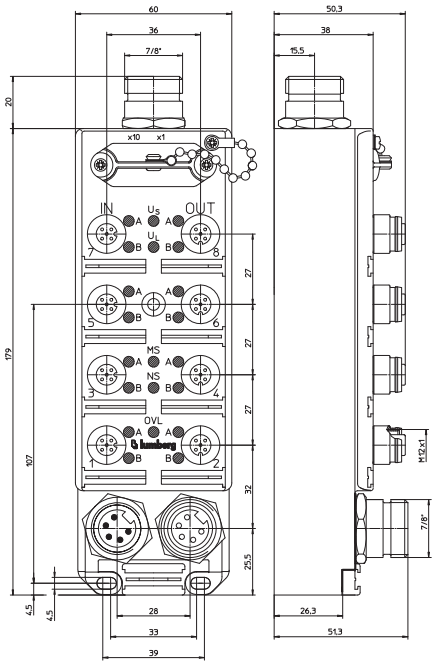
0930 DSL 314



8 IN / 8 OUT

DeviceNet device with 8 digital inputs to connect standard sensors and 8 digital outputs (0.5 A) to connect standard actuators, combined M12 socket, rotary switches for addressing, 7/8" bus connection, 7/8" actuator supply.

– Replaced 0930 DSL 302 and 0930 DSL 305 –



Bit Assignment

Bit	7	6	5	4	3	2	1	0
M12 Input								
Byte 0	7B	5B	3B	1B	7A	5A	3A	1A
Diagnostic: Input								
Byte 1	OVL	-	-	-	-	-	ASC	UVA
M12 Output								
Byte 0	8B	6B	4B	2B	8A	6A	4A	2A

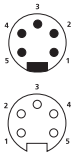
OVL: Overload status
ASC: Actuator short-circuit
UVA: Undervoltage actuator

Diagnostic Indication

LED	Indication	Condition
1...8 A/B	yellow	channel status
2, 4, 6, 8 A/B	red	actuator short-circuit / actuator overload
Us	green	actuator power supply
UL	green	system power supply
OVL	red	sensor short-circuit / sensor overload
MS	green	device is ready for operating
(Module status)	green flashing	incorrect or incomplete configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

Pin Assignment

Bus connection 7/8"



1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L

Actuator supply 7/8"



1 = earth
2 = +24 V
3 = GND (0 V)

Input M12



1 = +24 V
2 = IN B
3 = GND (0 V)
4 = IN A
5 = earth

Output M12



1 = n.c.
2 = OUT B
3 = GND (0 V)
4 = OUT A
5 = earth

1 = system/sensors



DeviceNet I/O Modules with 8-Digital Inputs and 8-Digital Outputs

0930 DSL 314

Technical Data

Environmental	
Degree of protection	IP 67
Operating temperature range	-0°C (+32°F) to +60°C (+140°F)
Mechanical	
Weight	570 g
Housing material	PUR
Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Autobaud	yes
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec
Electronics power supply	**UL**
Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	max. 800 mA
Reverse polarity protection	yes
Indication	LED green
Input power supply	
Voltage range	min. (UL - 1.5 V)
Total current of all sensors	max. 800 mA
Short circuit-proof	yes
Indication	LED green
Inputs	**Type 2 acc. to IEC 61131-2**
Rated input voltage	24 V DC
Signal state “1”	11–30 V
Signal state “0”	-3–5 V
Input current at 24 V	10 mA
Channel type N.O.	p-switching
Number of digital channels	8
Channel status indicator	LED yellow per channel

Output power supply	**Us**
Rated voltage	24 V DC
Voltage range	19–30 V DC
Potential separation	present
Reverse polarity protection	yes/antiparallel diode
Indication	LED green
Outputs	**Type 0.5 A acc. to IEC 61131-2**
Rated output current	0.7 A per channel
Short circuit-proof	yes
Max. output current	5.6 A
Overload-proof	yes
Number of digital channels	8
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per channel
Included in delivery/accessories	
Dust covers M12	2 pieces
Attachable labels	10 pieces

Communication modes
Polled I/O message connection
Change of state/ cyclic message connection
Explicit message connection

NOTE: EDS-files can be downloaded from our website **http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml**

Part Number
0930 DSL 314

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

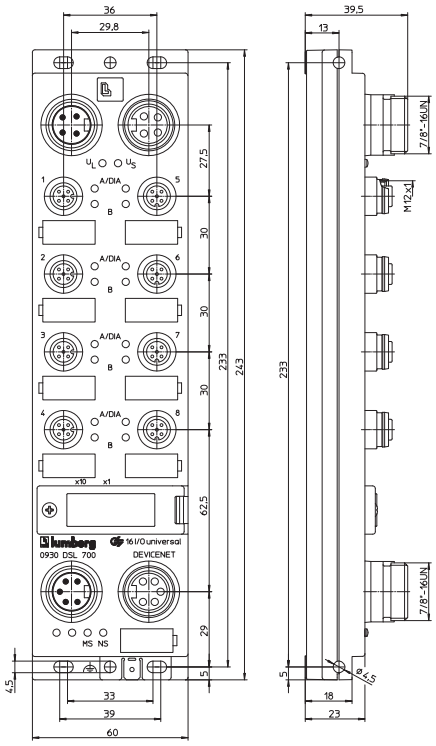
DeviceNet I/O Modules with 16-Digital Inputs & 16-Digital Outputs

0930 DSL 700



16 IN / 16 OUT (Universal)

DeviceNet device with 16 digital I/O channels, channels can be used universally as inputs or outputs, M12 socket, rotary switches for addressing, 7/8" bus connection, 7/8" power supply.



Bit Assignment

Bit	7	6	5	4	3	2	1	0
M12 Intput								
Byte 0	4B	4A	3B	3A	2B	2A	1B	1A
Byte 1	8B	8A	7B	7A	6B	6A	5B	5A
Diagnostic: Input								
Byte 2	S8	S7	S6	S5	S4	S3	S2	S1

S1...8: Socket Status 1...8

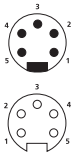
M12 Output								
Byte 0	4B	4A	3B	3A	2B	2A	1B	1A
Byte 1	8B	8A	7B	7A	6B	6A	5B	5A

Diagnostic Indication

LED	Indication	Condition
1...8 A/B	yellow	channel status
1...8 A/DIA	red	periphery fault
U_S	green	sensor power supply
U_L	green	actuator power supply
MS	green	device is ready for operating
(Module status)	green flashing	wrong configuration
	red	unrecoverable fault
	red flashing	recoverable fault
	red/green flashing	self test is running
NS	green	online, communication with PLC
(Network status)	green flashing	online, no communication with PLC
	red flashing	time-out state of one or more I/O connections
	red	failed communication device, BUS-OFF Status, duplicate MAC-ID

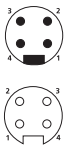
Pin Assignment

Bus connection 7/8"



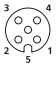
1 = Drain
2 = 24 V [1]
3 = GND (0 V) [1]
4 = CAN_H
5 = CAN_L
earth

Power supply 7/8"



1 = +24 V [2]
2 = +24 V [3]
3 = earth
3 = GND (0 V) [2/3]

Input/Output M12



1 = +24 V
2 = IN/OUT B
3 = GND (0 V)
4 = IN/OUT A
5 = earth

1 = System: galvanically separated to sensors/actuators
2 = Actuators
3 = Sensors



DeviceNet I/O Modules with 16-Digital Inputs & 16-Digital Outputs

0930 DSL 700

Technical Data

Environmental

Degree of protection	IP 67
Operating temperature range	-10°C (+14°F) to +60°C (+140°F)

Mechanical

Weight	380 g
Housing material	PBT

Bus system	**DeviceNet**
Transmission rate	max. 500 kBaud
Address range	0–63 dec
Rotary address switches	0–63 dec
Default address	63 dec

System power supply

Rated voltage	24 V DC
Voltage range	11–30 V DC
Power consumption	90 mA
Reverse polarity protection	yes

Input power supply	**Us**
Voltage range	19–30 V DC
Sensor current	200 mA (at Tamb 30°C) per socket
Short circuit-proof	yes
Indication	LED green

Inputs	**Type 3 acc. to IEC 61131-2**
Rated input voltage	24 V DC
Channel type N.O.	p-switching
Number of digital channels	max. 16
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per socket

Output power supply	**UL**
Rated voltage	24 V DC
Voltage range	19–30 V DC
Potential separation	present
Reverse polarity protection	yes/antiparallel diode
Indication	LED green

Outputs

Rated output current	1.6 A per channel
Short circuit-proof	yes
Max. output current	9 A (12 A*) per module

* Test proven and approved under the following conditions:
- looped through System/Sensorpower supply max. 2,5 A
- Power supply cable STL 204 (5 x 1.00 mm2)
- Operating temperature range max. 40°C

Overload-proof	yes
Number of digital channels max.	16
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel
Diagnostic indication	LED red per socket

Included in delivery/accessories

Dust covers M12	4 pieces
Attachable labels	10 pieces

NOTE: EDS-files can be downloaded from our website **http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml**

Part Number
0930 DSL 700

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet™

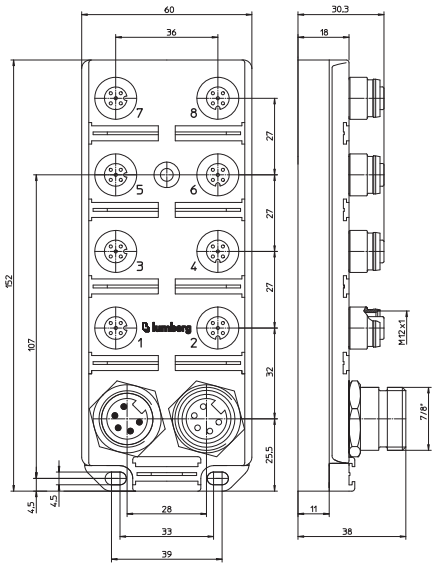
Passive DeviceNet Distribution Box

0931 DNC 301



8 x M12

Passive DeviceNet distribution box, 7/8" Bus-In/ Bus-Out connection for Trunk line, 8 x M12 branches for Drop line.



Pin Assignment

Bus connection 7/8"	Branch M12
1 = Drain 2 = 24 V [1] 3 = GND (0 V) [1] 4 = CAN_H 5 = CAN_L	1 = Drain 2 = + 24 V 3 = GND (0 V) 4 = CAN_H 5 = CAN_L



Passive DeviceNet Distribution Box

0931 DNC 301

Technical Data

Environmental

Degree of protection	IP 67
Operating temperature range	-10°C (+14°F) to +60°C (+140°F)

Mechanical

Weight	350 g
Housing material	PUR
Total current	max. 8 A / max. 3 A per M12 branch

Part Number
0931 DNC 301

The application of these products in harsh environments should always be checked before use.
Specifications subject to alteration.

DeviceNet Thin Cables

0935 253 103 | 0935 253 104 | 0935 253 105



0935 253 103/... M:

Double-ended M12 Male connector to M12 female connector, 5 poles

0935 253 104/... M:

Single-ended M12 Male connector, 5 poles

0935 253 105/... M:

Single-ended M12 Female connector, 5 poles

Electrical

Current rating	4 A
Voltage rating	250 V

0935 253 101



0935 253 101/... M

Double-ended with 7/8" male connector and M12 female connector, 5 poles.

Electrical

Current rating	4 A
Voltage rating	250 V

0935 253 102



0935 253 102/... M

Double-ended with M12 male connector and 7/8" female connector, 5 poles.

Electrical

Current rating	4 A
Voltage rating	250 V

Pin Assignment

Male connector / Female Connector, 5 Poles	Function	Color
Pin 1	Shield	
Pin 2	+ 24 V	red
Pin 3	GND (0 V)	black
Pin 4	CAN_H	white
Pin 5	CAN_L	blue

Part Number	Standard Cable Lengths
0935 253 103/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M | 20 M | 25 M
0935 253 104/...M	1 M | 3 M | 5 M | 10 M | 15 M
0935 253 105/...M	1 M | 3 M | 5 M | 10 M | 15 M
0935 253 101/...M	1 M | 2 M | 3 M | 5 M
0935 253 102/...M	1 M | 2 M | 3 M | 5 M



DeviceNet Thin Cables

0935 253 301 | 0935 253 302 | 0935 253 303



0935 253 301/... M:

Double-ended with 7/8" male connector and 7/8" female connector, 5 poles

0935 253 302/... M:

Single-ended with7/8" male connector, 5 poles

0935 253 303/... M:

Single-ended with7/8" female connector, 5 poles

Electrical

Current rating	4 A
Voltage rating	250 V

Pin Assignment

male connector / female connector, 5 poles	Function	Color
Pin 1	Shield	
Pin 2	+ 24 V	red
Pin 3	GND (0 V)	black
Pin 4	CAN_H	white
Pin 5	CAN_L	blue

Part Number	Standard Cable Lengths
0935 253 301/...M	1 M | 3 M | 5 M
0935 253 302/...M	1 M | 3 M | 5 M
0935 253 303/...M	1 M | 3 M | 5 M

DeviceNet Thin Cables, PVC Grey

0935 614 103 | 0935 614 104 | 0935 614 105



0935 614 103/... M

Double-ended cord set, 5 pole M12 male to M12 female connector.

0935 614 104/... M

Single-ended cord set, 5 pole M12 male connector.

0935 614 105/... M

Single-ended cord set, 5 pole M12 female connector.

Electrical

Current rating	4 A
Voltage rating	250 V

0935 614 301 | 0935 614 302 | 0935 614 303



0935 614 301/... M

Double-ended cord set, 5 pole 7/8" male to 7/8" female connector.

0935 614 302/... M

Single-ended cord set, 5 pole 7/8" male connector.

0935 614 303/... M

Single-ended cord set, 5 pole 7/8" female connector.

Electrical

Current rating	4 A
Voltage rating	300 V

0935 614 101



0935 614 101/... M

Double-ended cord set, 5 pole 7/8" male to M12 female connector.

Electrical

Current rating	4 A
Voltage rating	250 V



Pin Assignment

male connector / female connector, 5 poles	Function	Color
Pin 1	Shield	
Pin 2	+ 24 V	red
Pin 3	GND (0 V)	black
Pin 4	CAN_H	white
Pin 5	CAN_L	blue



DeviceNet Thin Cables, PVC Grey

Technical Data

Power pair	
Conductor	22 AWG stranded (0.34 mm2) tinned copper
Insulation of lead	PVC, with nylon outer skin
Colors of the leads	Red - black
Shielding over pair	Twisted pair with foil shield
Data pair	
Conductor	24 AWG stranded (0.25 mm2) tinned copper
Insulation of leads	Foamed polyethelene
Colors of the leads	Blue - white
Shielding over pair	Twisted pair with foil shield
Common drain wire	22 AWG stranded (0.34 mm2) tinned copper
Overall shield	Braided tinned copper coverage ca. 65 %
Jacket	PVC, Ø .270" (6.9mm) - According to ODVA "THIN" Specification, color: gray
Contacts	Solid-machined brass Gold over nickel plating per DN spec.
Mechanical data	
Degree of protection	IP 67 / NEMA 6P
Agency approvals	UL = type CMB and AWM 2969 CSA = I/II A/B 80C 300V FT4

Part Number	Standard Cable Lengths
0935 614 103/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 614 104/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 614 105/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 614 301/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 614 302/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 614 303/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 614 101/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M

DeviceNet Thin High-Flex Cables, TPE Black

0935 710 103 | 0935 710 104 | 0935 710 105



0935 710 103/... M

Double-ended cord set, 5 pole M12 male to M12 female connector.

0935 710 104/... M

Single-ended cord set, 5 pole M12 male connector.

0935 710 105/... M

Single-ended cord set, 5 pole M12 female connector.

Electrical

Current rating	4 A
Voltage rating	250 V

0935 710 301 | 0935 710 302 | 0935 710 303



0935 710 301/... M

Double-ended cord set, 5 pole 7/8" male to 7/8" female connector.

0935 710 302/... M

Single-ended cord set, 5 pole 7/8" male connector.

0935 710 303/... M

Single-ended cord set, 5 pole 7/8" female connector.

Electrical

Current rating	4 A
Voltage rating	300 V

0935 710 101



0935 710 101/... M

Double-ended cord set, 5 pole 7/8" male to M12 female connector.

Electrical

Current rating	4 A
Voltage rating	250 V



Pin Assignment

male connector / female connector, 5 poles	Function	Color
Pin 1	Shield	
Pin 2	+ 24 V	red
Pin 3	GND (0 V)	black
Pin 4	CAN_H	white
Pin 5	CAN_L	blue



DeviceNet Thin High-Flex Cables, TPE Black

Technical Data

Power pair	
Conductor	22 AWG stranded (0.34 mm2) tinned copper
Insulation of lead	PVC
Colors of the leads	Red - black
Shielding over pair	Twisted pair with foil shield
Data pair	
Conductor	24 AWG stranded tinned copper
Insulation of leads	Foamed polyethelene
Colors of the leads	Blue - white
Shielding over pair	Twisted pair with foil shield
Common drain wire	22 AWG stranded tinned copper
Overall shield	Aluminum/mylar foil shield, coverage 100% and braided shield, coverage 65%
Jacket	TPE, Ø .280" (7.1mm) - According to ODVA "THIN" Specification, color: black
Contacts	Solid-machined brass Gold over nickel plating per DN spec.
Mechanical data	
Degree of protection	IP 67 / NEMA 6P
Agency approvals	UL = Type AWM 20626 CSA = I/II A/B 80C 300V FT1

Part Number	Standard Cable Lengths
0935 710 103/...M	0.3 M I 0.6 M I 1 M I 2 M I 3 M I 5 M I 10 M I 15 M
0935 710 104/...M	0.3 M I 0.6 M I 1 M I 2 M I 3 M I 5 M I 10 M I 15 M
0935 710 105/...M	0.3 M I 0.6 M I 1 M I 2 M I 3 M I 5 M I 10 M I 15 M
0935 710 301/...M	0.3 M I 0.6 M I 1 M I 2 M I 3 M I 5 M I 10 M I 15 M
0935 710 302/...M	0.3 M I 0.6 M I 1 M I 2 M I 3 M I 5 M I 10 M I 15 M
0935 710 303/...M	0.3 M I 0.6 M I 1 M I 2 M I 3 M I 5 M I 10 M I 15 M
0935 710 101/...M	0.3 M I 0.6 M I 1 M I 2 M I 3 M I 5 M I 10 M I 15 M

DeviceNet Mid High-Flex Cables, TPE Black

0935 709 103 | 0935 709 104 | 0935 709 105



0935 709 103/... M

Double-ended cord set, 5 pole M12 male to M12 female connector.

0935 709 104/... M

Single-ended cord set, 5 pole M12 male connector.

0935 709 105/... M

Single-ended cord set, 5 pole M12 female connector.

Electrical

Current rating	4 A
Voltage rating	250 V

0935 709 301 | 0935 709 302 | 0935 709 303



0935 709 301/... M

Double-ended cord set, 5 pole 7/8" male to 7/8" female connector.

0935 709 302/... M

Single-ended cord set, 5 pole 7/8" male connector.

0935 709 303/... M

Single-ended cord set, 5 pole 7/8" female connector.

Electrical

Current rating	8 A power / 4 A signal
Voltage rating	300 V

0935 709 101



0935 709 101/... M

Double-ended cord set, 5 pole 7/8" male to M12 female connector.

Electrical

Current rating	4 A
Voltage rating	250 V



Pin Assignment

male connector / female connector, 5 poles	Function	Color
Pin 1	Shield	
Pin 2	+ 24 V	red
Pin 3	GND (0 V)	black
Pin 4	CAN_H	white
Pin 5	CAN_L	blue



DeviceNet Mid High-Flex Cables, TPE Black

Technical Data

Power pair	
Conductor	16 AWG stranded tinned copper
Insulation of lead	PVC
Colors of the leads	Red - black
Shielding over pair	Twisted pair with foil shield
Data pair	
Conductor	20 AWG stranded tinned copper
Insulation of leads	Foamed polyethelene
Colors of the leads	Blue - white
Shielding over pair	Twisted pair with foil shield
Common drain wire	20 AWG stranded tinned copper
Overall shield	Foil Shield: Aluminum/mylar foil shield, coverage 100%, Braided Shield: tinned copper, coverage 65%
Jacket	TPE, Ø .380” (9.7mm) - According to ODVA “MID” Specification, color: black
Contacts	Solid-machined brass Gold over nickel plating per DN spec.
Mechanical data	
Degree of protection	IP 67 / NEMA 6P
Agency approvals	UL = Type AWM 20626 CSA = I/II A/B 80C 300V FT1

Part Number	Standard Cable Lengths
0935 709 103/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 709 104/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 709 105/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 709 301/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 709 302/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 709 303/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 709 101/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M

DeviceNet Thick Cables, PVC Grey

0935 613 301 | 0935 613 304 | 0935 613 305



0935 613 301/... M

Double-ended cord set, 5 pole 7/8" male to 7/8" female connector.

0935 613 302/... M

Single-ended cord set, 5 pole 7/8" male connector.

0935 613 303/... M

Single-ended cord set, 5 pole 7/8" female connector.

Electrical

Current rating	8 A
Voltage rating	300 V



Pin Assignment

male connector / female connector, 5 poles	Function	Color
Pin 1	Shield	
Pin 2	+ 24 V	red
Pin 3	GND (0 V)	black
Pin 4	CAN_H	white
Pin 5	CAN_L	blue



DeviceNet Thick Cables, PVC Grey

Technical Data

Power pair	
Conductor	16 AWG stranded tinned copper
Insulation of lead	PVC with nylon skin
Colors of the leads	Red - black
Shielding over pair	Twisted pair with foil shield
Data pair	
Conductor	18 AWG stranded tinned copper
Insulation of leads	Foamed polyethelene
Colors of the leads	Blue - white
Shielding over pair	Twisted pair with foil shield
Common drain wire	18 AWG stranded tinned copper
Overall shield	Braided, tinned copper, coverage 65%
Jacket	PVC, Ø .430" (10.9mm) - According to ODVA "THICK" Specification, color: gray
Contacts	Solid-machined brass Gold over nickel plating per DN spec.
Mechanical data	
Degree of protection	IP 67 / NEMA 6P
Agency approvals	UL=CL2 AND type AWM 2969 CSA=AWM I/II A/B 80C 300V FT4

Part Number	Standard Cable Lengths
0935 613 301/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 613 302/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 613 303/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M

DeviceNet Type V Trunk Cable, PVC Grey

0935 636 301 | 0935 636 302 | 0935 636 303



0935 636 301/... M

Double-ended cord set, 5 pole 7/8" male to 7/8" female connector.

0935 636 302/... M

Single-ended cord set, 5 pole 7/8" male connector.

0935 636 303/... M

Single-ended cord set, 5 pole 7/8" female connector.

Electrical

Current rating	8 A
Voltage rating	600 V



Pin Assignment

male connector / female connector, 5 poles	Function	Color
Pin 1	Shield	
Pin 2	+ 24 V	red
Pin 3	GND (0 V)	black
Pin 4	CAN_H	white
Pin 5	CAN_L	blue



DeviceNet Type V Trunk Cable, PVC Grey

Technical Data

Power pair	
Conductor	16 AWG stranded tinned copper
Insulation of lead	PVC
Colors of the leads	Red - black
Shielding over pair	Twisted pair with foil shield
Data pair	
Conductor	18 AWG stranded tinned copper
Insulation of leads	Polypropylene
Colors of the leads	Blue - white
Shielding over pair	Twisted pair with foil shield
Common drain wire	16 AWG stranded tinned copper
Overall shield	Braided, tinned copper, coverage 65%
Jacket	PVC, Ø .525" (13.3mm) - According to ODVA "TYPE V" Specification, color: gray
Contacts	Solid-machined brass Gold over nickel plating per DN spec.
Mechanical data	
Degree of protection	IP 67 / NEMA 6P
Agency approvals	UL = TC CSA = AWM I/II A/B 80C 300V FT4

Part Number	Standard Cable Lengths
0935 636 301/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 636 302/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M
0935 636 303/...M	0.3 M | 0.6 M | 1 M | 2 M | 3 M | 5 M | 10 M | 15 M

DeviceNet

DeviceNet Power Supply Cables

0905 203 302 | 0905 203 301



0905 203 302/0.6 M

Double-ended with 7/8" male connector and 7/8" female connector, 3 poles, 0.6 M.

0905 203 301/... M

Single-ended with 7/8" female connector, 3 poles.

Electrical

Current rating	8 A
Voltage rating	300 V

7/8" Male/Female 3-Poles	Leads
Pin 1	green/yellow
Pin 2	1
Pin 3	2

0905 356 312 | 0905 356 311 | 0905 356 313



0905 356 312/0.6 M

Double-ended with 7/8" male connector and 7/8" female connector, 4 poles, 0.6 M.

0905 356 311/... M

Single-ended with 7/8" female connector, 4 poles.

0905 356 313/... M

Single-ended with 7/8" male connector, 4 poles.

Electrical

Current rating	8 A
Voltage rating	300 V

7/8" Male/Female 4-Poles	Leads
Pin 1	1
Pin 2	2
Pin 3	green/yellow
Pin 4	3

0905 356 305 | 0905 356 304 | 0905 356 306



0905 356 305/0.6 M

Double-ended with 7/8" male connector and 7/8" female, 90° connector, 4 poles, 0.6 M.

0905 356 304/... M

Single-ended with 7/8" female, 90° connector, 4 poles.

0905 356 306/... M

Single-ended with 7/8" male, 90° connector, 4 poles.

Electrical

Current rating	8 A
Voltage rating	300 V

7/8" Male/Female 4-Poles (90°)	Leads
Pin 1	1
Pin 2	2
Pin 3	green/yellow
Pin 4	3

Part Number			Standard Cable Lengths
0905 203 302/0.6 M			
0905 203 301/...M			5 M | 10 M | 15 M
	0905 356 312/0.6 M	0905 356 305/0.6 M	
	0905 356 311/... M	0905 356 304/... M	5 M | 10 M | 15 M
	0905 356 313/... M	0905 356 306/... M	5 M | 10 M | 15 M



DeviceNet Terminating Resistors, 5-pole

0939 CTX 101



DeviceNet terminating resistor, M12 male connector, 5 poles.

0939 CTX 102



DeviceNet terminating resistor, M12 female connector, 5 poles.

0939 CTX 301



DeviceNet terminating resistor, 7/8" male connector, 5 poles.

0939 CTX 302



DeviceNet terminating resistor, 7/8" female connector, 5 poles.

0939 CTX 105



DeviceNet terminating resistor, M12 male connector, 5 poles.

0939 CTX 106



DeviceNet terminating resistor, M12 female connector, 5 poles.

0939 CTX 303



DeviceNet terminating resistor, 7/8" male connector, 5 poles.

0939 CTX 304



DeviceNet terminating resistor, 7/8" female connector, 5 poles.

Part Number	
0939 CTX 101	0939 CTX 105
0939 CTX 102	0939 CTX 106
0939 CTX 301	0909 CTX 303
0939 CTX 302	0909 CTX 304

DeviceNet T-Connectors / Taps

0906 UTP 301

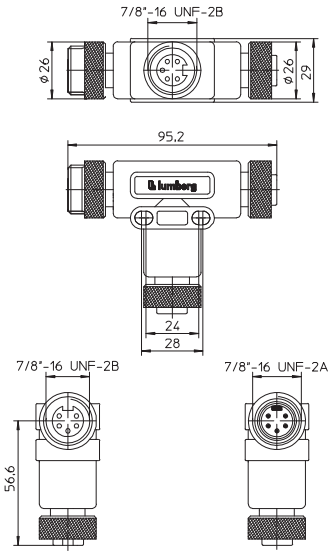


7/8” Male to 2 x 7/8” Female

Splitter/T-connector, with one 7/8" female, one 7/8" male, and one 7/8" female connectors, 5-poles.

– especially suitable for DeviceNet modules with 7/8" bus connection –

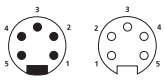
0906 UTP 301



Pin Assignments

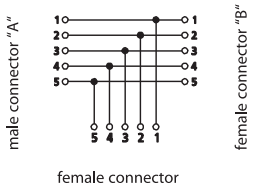
Face Views

7/8” - 5 poles



1 = drain
2 = + 24 V
3 = GND (0 V)
4 = CAN_H
5 = CAN_L

Wiring Diagrams



female connector



DeviceNet T-Connectors / Taps

0906 UTP 301

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-25°C (-13°F) / +90°C (+194°F)

Mechanical

Housing / Molded body	TPU
Insert	TPU
Contact	CuZn, pre-nickeled and 0.8 microns gold-plated
Coupling nut	Aluminum, black anodized

Electrical

Contact resistance	≤ 5 mΩ
Nominal current at 20°C	Trunk: 8 A Drop: 4 A
Nominal voltage	300 V
Insulation resistance	> 10^9 Ω
Pollution degree	3

Part Number	Pins	Characteristics
0906 UTP 301	5	

DeviceNet

DeviceNet T-Connectors / Taps

0906 UTP 302

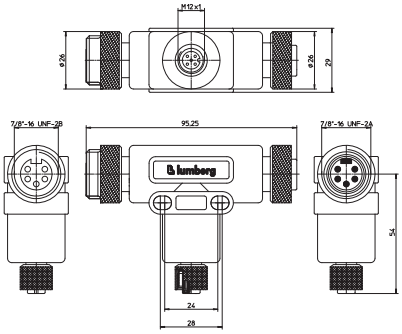


M12 Female to 1 x 7/8” Male and 1 x 7/8” Female

Splitter/T-connector, with one M12 female, one 7/8" male and one 7/8" female connectors, 5-poles.

– especially suitable for DeviceNet and CANopen modules with M12 bus connection –

0906 UTP 302



Pin Assignments

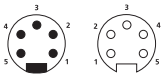
Face Views

M12 - 5 poles



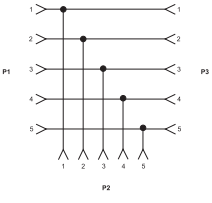
1 = drain
2 = + 24 V
3 = GND (0 V)
4 = CAN_H
5 = CAN_L

7/8” - 5 poles



1 = drain
2 = + 24 V
3 = GND (0 V)
4 = CAN_H
5 = CAN_L

Wiring Diagram





DeviceNet T-Connectors / Taps

0906 UTP 302

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-40°C (-40°F) / +90°C (+194°F)

Mechanical

Housing / Molded body	TPU
Insert	TPU
Contact	CuZn, pre-nickeled and gold-plated acc. to DeviceNet specification
Coupling nut	Aluminum, brass, nickeled (7/8”) CuZn, brass, nickeled (M12)

Electrical

Nominal current	Trunk: 8 A Drop: 4 A
Nominal voltage	30 V AC / 36 V DC

Part Number	Pins	Characteristics
0906 UTP 302	5	

DeviceNet

DeviceNet T-Connectors / Taps

0906 UTP 303

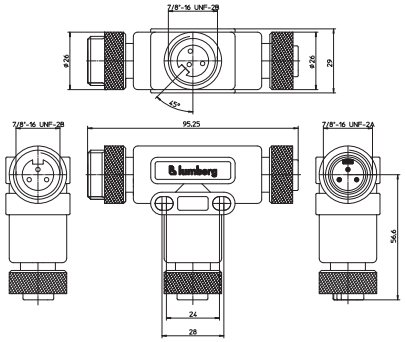


1 x M12 Female to 1 x 7/8” Male to 1 x 7/8” Female

Splitter/T-connector, with one 7/8" female, one 7/8" male and one 7/8" female connectors, 3-poles.

– especially suitable for DeviceNet and CANopen modules –

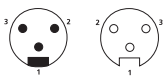
0906 UTP 303



Pin Assignments

Face Views

7/8” - 3 poles



1 = earth
2 = + 24 V
3 = GND (0 V)



DeviceNet T-Connectors / Taps

0906 UTP 303

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-40°C (-40°F) / +90°C (+194°F)

Mechanical

Housing / Molded body	TPU
Insert	TPU
Contact	CuZn, gold over silver plating
Coupling nut	Aluminum, black anodized

Electrical

Nominal current	8 A
Nominal voltage	600 V

Part Number	Pins	Characteristics
0906 UTP 303	3	

DeviceNet

DeviceNet T-Connectors / Taps

0906 UTP 312

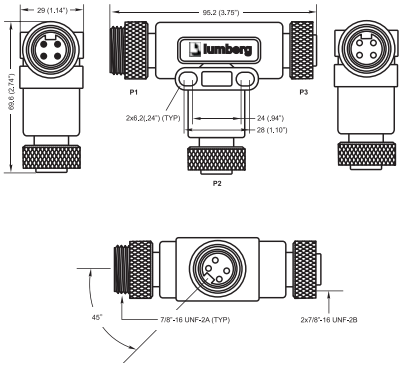


7/8” Female to 1x7/8” Male and Female

Splitter/T-connector, with one 7/8" female, one 7/8" male and one 7/8" female connectors, 4-poles.

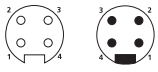
– especially suitable for DeviceNet and CANopen modules –

0906 UTP 301

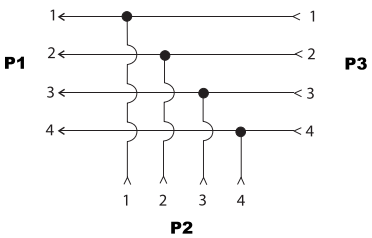


Pin Assignments

Face Views	Wiring Diagram
7/8 - 4 poles	



P 2/3 P 1





DeviceNet T-Connectors / Taps

0906 UTP 312

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-40°C (-40°F) / +90°C (+194°F)

Mechanical

Housing / Molded body	TPU, yellow
Insert	TPU, yellow
Contact	CuZn, pre-nickeled and gold-plated acc. to DeviceNet specification
Coupling nut	Aluminum, black anodized

Electrical

Nominal current	8 A
Nominal voltage	600 V

Part Number	Pins	Characteristics
0906 UTP 312	4	

DeviceNet

DeviceNet T-Connectors / Taps

0906 UTP 101

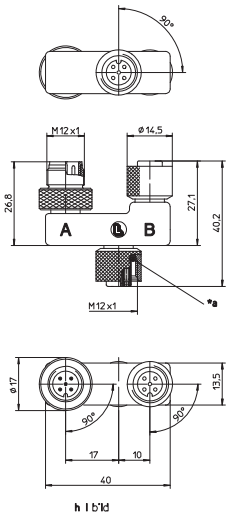


1 x M12 Male and 2 x M12 Female

Splitter/T-connector, with one M12 male and two M12 female connectors, 5-poles.

– especially suitable for DeviceNet and CANopen modules with M12 bus connection –

0906 UTP 101

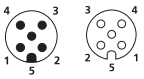


*a O-Ring

Pin Assignments

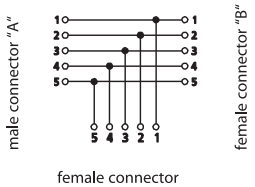
Face Views

M12 - 5-poles



1 = drain
2 = + 24 V
3 = GND (0 V)
4 = CAN_H
5 = CAN_L

Wiring Diagrams



female connector



DeviceNet T-Connectors / Taps

0906 UTP 101

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-25°C (-13°F) / +90°C (+194°F)

Mechanical

Housing / Molded body	TPU
Insert	TPU
Contact	CuZn, pre-nickeled and gold-plated
Coupling nut	CuZn, brass, nickeled
O-ring	FKM

Electrical

Contact resistance	≤ 5 mΩ
Nominal current at 40°C	4 A per outlet / 4 A max. total
Nominal voltage	60 V
Test voltage	1.5 kV eff. / 60 s
Insulation resistance	> 10^9 Ω
Pollution degree	3

Part Number	Pins	Characteristics
0906 UTP 101	5	

DeviceNet Receptacles, M12

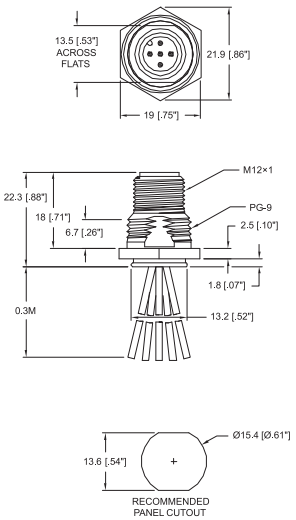
0936 DMC 151 I 0936 DFC 151



5-Pole, Male

DeviceNet, 5-pole, male, M12 receptacle, 0.3 M leads, THIN specification, PG 9 thread for panel mount.

0936 DMC 151

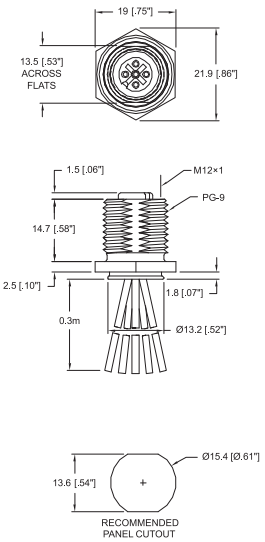




5-Pole, Female

DeviceNet, 5-pole, female, M12 receptacle, 0.3 M leads, THIN specification, PG 9 thread for panel mount.

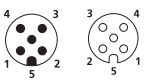
0936 DFC 151



Pin Assignments

Face Views, M12

5 pole



1 = drain
2 = +24 V DC
3 = 0 V
4 = CAN_H
5 = CAN_L



DeviceNet Receptacles, M12

0936 DMC 151 | 0936 DFC 151

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-40°C (-40°F) / +90°C (+194°F)

Mechanical

Housing	Brass, nickel-plated
Insert	Polyamide, black
Contact	Brass, gold over nickel-plated
Panel nut	Brass, nickel plated

Electrical

Current rating	4 A
Voltage rating	250 V

Wiring Specifications

Conductor	22 AWG, stranded
Insulation	PVC
UL recognition	UL 1007

Part Number		Pins	Characteristics
Male	**Female**		
0936 DMC 151/0.3 M		**5**	
	0936 DFC 151/0.3M	**5**	

DeviceNet Receptacles, M12

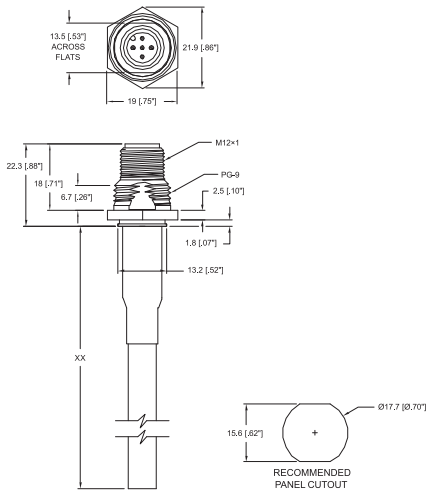
0936 DMC 152 I 0936 DFC 152



5-Pole, Male

DeviceNet, 5-pole, male M12 receptacle, assembled THIN cable, PG 9 thread for panel mount.

0936 DMC 152

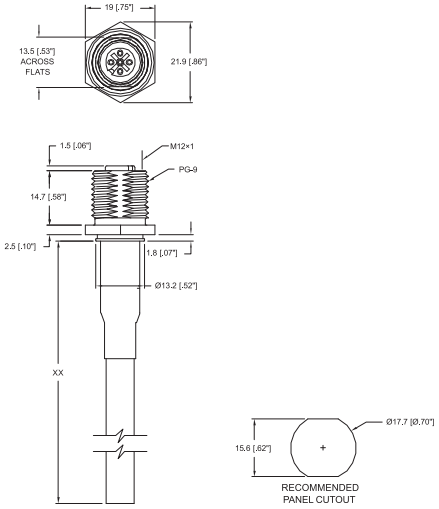




5-Pole, Female

DeviceNet, 5-pole, female M12 receptacle, assembled THIN cable, PG 9 thread for panel mount.

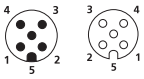
0936 DFC 152



Pin Assignments

Face Views, M12

5 pole



1 = drain
2 = +24 V DC
3 = 0 V
4 = CAN_H
5 = CAN_L



DeviceNet Receptacles, M12

0936 DMC 152 | 0936 DFC 152

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-40°C (-40°F) / +90°C (+194°F)

Mechanical

Housing	Brass, nickel-plated
Insert	0936 DMC 152: PUR, yellow 0936 DFC 152: PUR, black
Contact	Brass, gold over nickel-plated
Panel nut	Brass, nickel plated

Electrical

Current rating	4 A
Voltage rating	250 V

Cable Specifications

Cable jacket	PVC, grey
Overall diameter	.270”
Conductor	1 Pair 22 AWG, 1 Pair 24 AWG
Cable construction	according to Devicenet THIN cable specification

Part Number		Pins	Cable Lengths	Characteristics
Male	**Female**			
0936 DMC 152/...M		**5**	2 M	
	0936 DFC 152/...M	**5**	2M	

DeviceNet Receptacles, M12 PCB

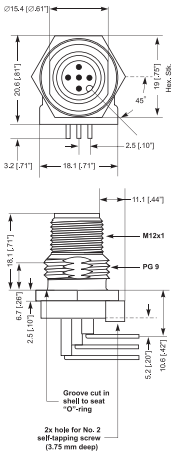
RSWF5-PCB | RKWF5-PCB



5-Pole, Male

DeviceNet, 5-pole, male M12 receptacle, 90° PCB mount, PG9 panel cut-out.

RSWF5-PCB

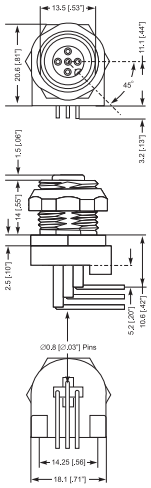




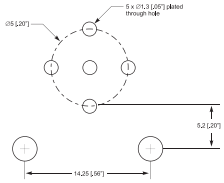
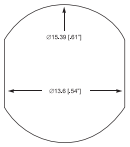
5-Pole, Female

DeviceNet, 5-pole, female M12 receptacle, 90° PCB mount, PG9 panel cut-out.

0936 DFC 152



Pin Assignments

Face Views, M12	Recommended PCB Pattern	Recommended Panel Cutout
5 pole 1 = drain 2 = +24 V DC 3 = 0 V 4 = CAN_H 5 = CAN_L		



DeviceNet Receptacles, M12 PCB

RSWF5-PCB | RKWF5-PCB

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-25°C (-13°F) / +90°C (+194°F)

Materials

Contact	Solid, machined brass Gold over nickel plating per DN specifications
Insert	RSWF 5-PCB: Nylon, black RKWF 5-PCB: PUR, black
Shell	Brass, nickel plated
Coupling nut	Brass, nickel plated

Mechanical

O-ring	viton
PCB mount	5-pin insertion with hole for 2 self-tapping screw in base

Electrical

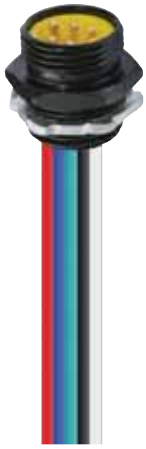
Current rating	4A
Voltage rating	250 V

Part Number		Pins	Characteristics
Male	**Female**		
RSWF5-PCB		**5**	
	RKWF5-PCB	**5**	

DeviceNet

DeviceNet Receptacles, 7/8”

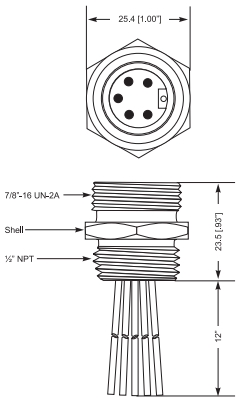
0936 DMC 352 I 0936 DFC 352

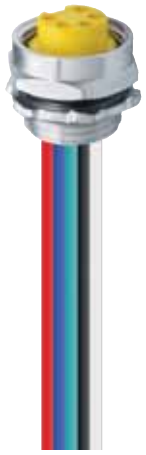


5-Pole, Male

DeviceNet, 5-pole, male 7/8" receptacle, 0.3 meter leads, THICK specification, 1/2 NPT thread for panel mount.

0936 DMC 352

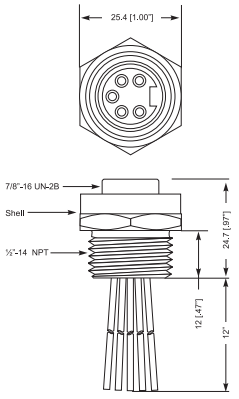




5-Pole, Female

DeviceNet, 5-pole, female 7/8" receptacle, 0.3 meter leads, THICK specification, 1/2 NPT thread for panel mount.

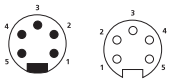
0936 DFC 352



Pin Assignments

Face Views, 7/8”

5 pole



1 = green
2 = red
3 = black
4 = white
5 = blue



DeviceNet Receptacles, 7/8”

0936 DMC 352 | 0936 DFC 352

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-25°C (-13°F) / +90°C (+194°F)

Materials

Contacts	Brass, gold over nickel plated per DeviceNet specification
Insert	PUR, yellow
O-ring	Viton
Shell	Male: Zinc die cast, (e-coated black), Female: Alumimum, clear anodized
Panel nut	Steel, nickel plated

Electrical

Current ratingq	8 A
Voltage rating	600 V

Part Number		Pins	Characteristics
Male	**Female**		
0936 DMC 352/0.3M		**5**	
	0936 DFC 352/0.3M	**5**	

DeviceNet

DeviceNet Receptacles, 7/8”

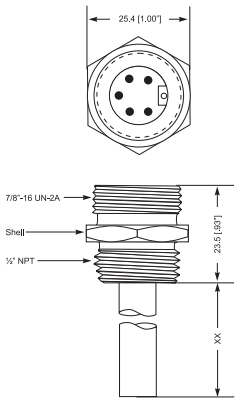
0936 DMC 353 I 0936 DFC 353



5-Pole, Male

DeviceNet, 5-pole, male 7/8" receptacle, assembled THICK cable, 1/2NPT thread for panel mount.

0936 DMC 353

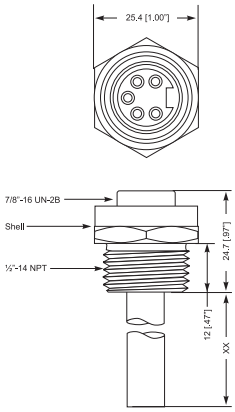




5-Pole, Female

DeviceNet, 5-pole, female 7/8" receptacle, assembled THICK cable, 1/2NPT thread for panel mount.

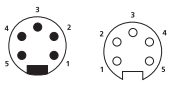
0936 DFC 353



Pin Assignments

Face Views, 7/8”

5 pole



1 = green
2 = red
3 = black
4 = white
5 = blue



DeviceNet Receptacles, 7/8”

0936 DMC 353 | 0936 DFC 353

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-25°C (-13°F) / +90°C (+194°F)

Materials

Contacts	Brass, gold over nickel plated per DeviceNet specification
Insert	PUR, yellow
O-ring	Viton
Shell	Male: Zinc die cast, (e-coated black), Female: Alumimum, clear anodized
Panel nut	Steel, nickel plated

Electrical

Current rating	8 A
Voltage rating	300 V

Cable specifications	**Thick cable (613)**
Outer jacket	Oil resistant PVC (light grey)
Conductor	15AWG tinned copper power pair 18AWG tinned copper data pair
Outer diameter	0.430” nominal
Conductor insulation	Foamed PE (signal) & PVC with nylon skin (power)

Part Number		Pins	Cable Lengths	Characteristics
Male	**Female**			
0936 DMC 353/...M		**5**	0.5 M / 1 M / 2 M / 5 M	
	0936 DFC 353/...M	**5**	1 M / 2 M / 5 M	

DeviceNet

DeviceNet Receptacles, 7/8”

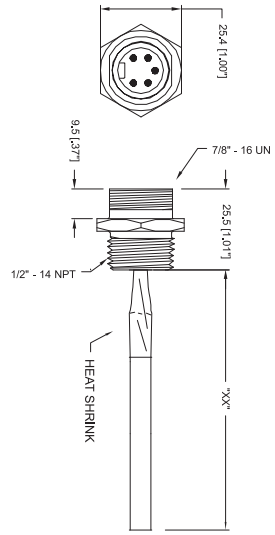
0936 DMC 355 I 0936 DFC 355



5-Pole, Male

DeviceNet, 5-pole, male 7/8" receptacle, assembled THIN cable, 1/2" NPT thread for panel mount.

0936 DMC 355

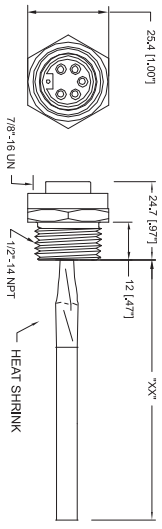




5-Pole, Female

DeviceNet, 5-pole, female 7/8" receptacle, assembled THIN cable, 1/2" NPT thread for panel mount.

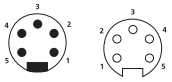
0936 DFC 355



Pin Assignments

Face Views, 7/8”

5 pole



1 = green
2 = red
3 = black
4 = white
5 = blue



DeviceNet Receptacles, 7/8”

0936 DMC 355 | 0936 DFC 355

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-25°C (-13°F) / +90°C (+194°F)

Materials

Housing	DMC: Zinc die cast, e-coated black DFC: Aluminum, anodized clear
Insert	PUR, yellow
Contacts	Brass, gold over nickel plated per DN specification

Electrical

Current rating	4 A
Voltage rating	300 V

Cable specifications	**Thin cable (614)**
Cable jacket	PVC, grey
Overall diameter	.270”
Conductor	1Pair, 22 AWG / 1 Pair 24 AWG
Cable construction	According to DeviceNet THIN cable specifications

Part Number		Pins	Cable Lengths	Characteristics
Male	**Female**			
0936 DMC 355/...M		**5**	1 M / 2 M / 3 M / 4 M / 5 M	
	0936 DFC 355/...M	**5**	1 M / 2 M / 3 M / 4 M / 5 M	

DeviceNet Receptacles, Panel Feed Through, 7/8”

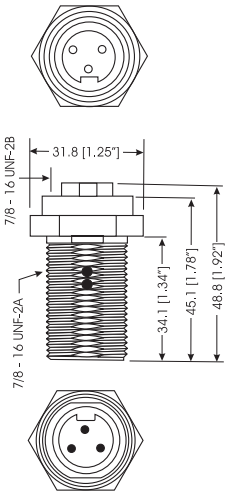
0906 UAC 301 | 0906 UAC 302 | 0906 UAC 303



5-Pole, Male

DeviceNet, 3-, 4-, and 5-pole, male to female 7/8” panel feed through receptacle.

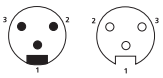
0906 UAC 303



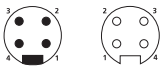
Pin Assignments

Face Views, 7/8”

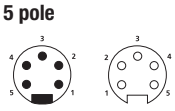
3 pole



4 pole



5 pole





DeviceNet Receptacles, 7/8”

0906 UAC 301 | 0906 UAC 302 | 0906 UAC 303

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-25°C (-13°F) / +90°C (+194°F)

Materials

Contacts	Brass, gold over nickel plated
Insert	PUR, yellow
O-ring	Viton
Shell	Brass, nickel plated
Panel nut	Zinc diecast, zinc plated

Electrical

Current rating	8 A
Voltage rating	600 V

Part Number	Pins		Characteristics
0906 UAC 301	3		
0906 UAC 302	4		
0906 UAC 303	5		

DeviceNet Receptacles, Panel Feed Through, M12

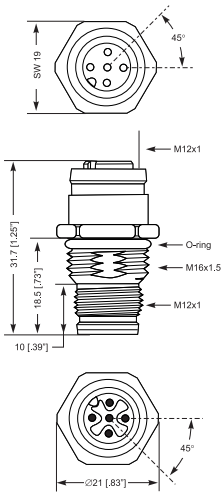
FWD 5



5-Pole, Male

DeviceNet, 5-pole, male to female M12 panel feed through receptacle.

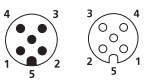
FWD 5



Pin Assignments

Face Views, M12

5 pole





DeviceNet Receptacles, 7/8”

FWD 5

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-25°C (-13°F) / +80°C (+175°F)

Materials

Housing / Molded body	CuZn, nickel-plated
Insert male connector	PA 6.6
Insert female connector	TPU, self-extinguishing
Contacts	CuZn, pre-nickeled and 0.8 microns gold-plated
O-ring	FKM

Electrical

Contact resistance	≤5mΩ
Nominal current at 40°	4 A
Nominal voltage	60 V
Test voltage	1.5 kV eff. / 60 s
Insulation resistance	$>10^9\Omega$

Part Number	Pins		Characteristics
FWD 5	**5**		

DeviceNet

DeviceNet Field Attachable Connectors, M12

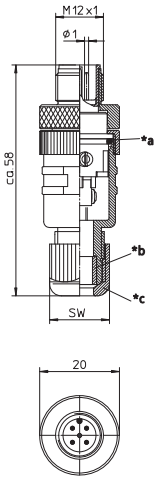
0936 DMC 101 I 0936 DFC 101



5-Pole, Male

DeviceNet, 5-pole, male field attachable M12 connector with screw terminal connection, cable outlet suitable for THIN DeviceNet cable, DeviceNet color coding.

0936 DMC 101

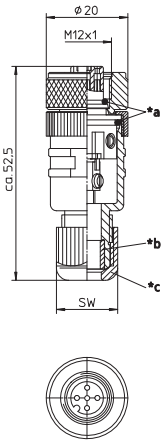




5-Pole, Female

DeviceNet, 5-pole, female field attachable M12 connector with screw terminal connection, cable outlet suitable for THIN DeviceNet cable, DeviceNet color coding.

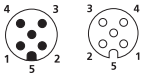
0936 DFC 101



Pin Assignments

Face Views / M12

5 pole





DeviceNet Field Attachable Connectors, M12

0936 DMC 101 | 0936 DFC 101

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-25°C (-13°F) / +90°C (+194°F)

Materials

Housing / Molded body	PA
Insert	PA
Contact	CuZn, pre-coppered
Coupling nut	CuZn, nickel-plated
O-ring	FKM

Mechanical

Mode of connection	Screw terminals
Connectable conductor	max. 0.75 mm^2

Electrical

Contact resistance	≤5mΩ
Current rating	4 A
Voltage rating	250 V

Part Number		Pins		Characteristics
0936 DMC 101		5		UL
	0936 DFC 101	5		UL

DeviceNet Field Attachable Connectors, M12

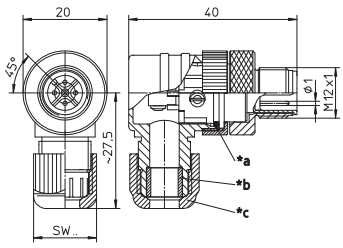
0936 DMC 102 I 0936 DFC 102



5-Pole, Male

DeviceNet, 5-pole, male 90° field attachable M12 connector with screw terminal connection, cable outlet suitable for THIN DeviceNet cable, DeviceNet color coding.

0936 DMC 102

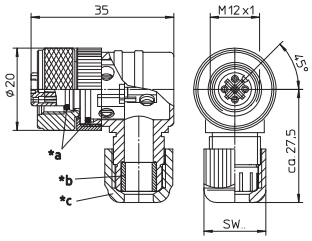




5-Pole, Female

DeviceNet, 5-pole, female 90° field attachable M12 connector with screw terminal connection, cable outlet suitable for THIN DeviceNet cable, DeviceNet color coding.

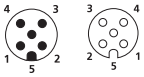
0936 DFC 102



Pin Assignments

Face Views / M12

5 pole





DeviceNet Field Attachable Connectors, M12

0936 DMC 102 | 0936 DFC 102

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-25°C (-13°F) / +90°C (+194°F)

Materials

Housing / Molded body	PA
Insert	PA
Contact	CuZn, pre-coppered
Coupling nut	CuZn, nickel-plated
O-ring	FKM

Mechanical

Mode of connection	Screw terminals
Connectable conductor	max. 0.75 mm^2

Electrical

Contact resistance	≤5mΩ
Current rating	4 A
Voltage rating	250 V

Part Number		Pins		Characteristics
0936 DMC 102		**5**		UL
	0936 DFC 102	**5**		UL

DeviceNet Field Attachable Connectors, 7/8”

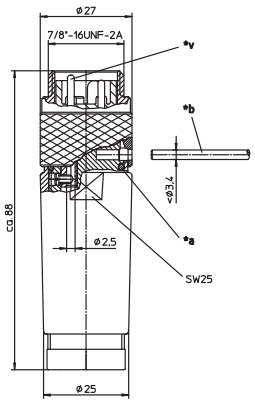
0936 DMC 301 | 0936 DMC 303



5-Pole, Male

DeviceNet, 5-pole, male field attachable 7/8" connector with screw terminal connection, cable outlet suitable for THIN and THICK DeviceNet cable.

0936 DMC 301 | 0936 DMC 303



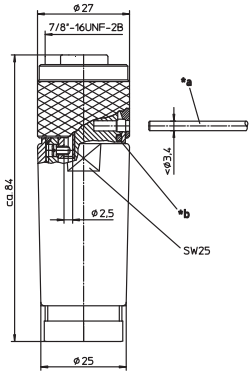
0936 DFC 301 | 0936 DFC 303



5-Pole, Female

DeviceNet, 5-pole, female field attachable 7/8" connector with screw terminal connection, cable outlet suitable for THIN and THICK DeviceNet cable.

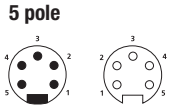
0936 DFC 301 | 0936 DFC 303



Pin Assignments

Face Views / 7/8”

5 pole





DeviceNet Field Attachable Connectors, M12

0936 DMC 301 | 0936 DMC 303 | 0936 DFC 301 | 0936 DFC 303

Technical Data

Environmental

Degree of protection	IP 67 / NEMA 6P
Operating temperature range	-40°C (-40°F) / +90°C (+194°F)

Materials

Housing / Molded body	PA
Insert	TPU, self-extinguishing
Contact	CuZn, pre-nickeled and 0.8 microns gold-plated
Coupling nunt	Aluminum, black anodized
O-ring	NBR

Mechanical

Mode of connection	Screw terminals
Connectable conductor	max. 1.5 mm^2

Electrical

Current rating	8 A
Voltage rating	250 V

Part Number		Pins	Cable Type	Characteristics
0936 DMC 301		5	Thin	UL
0936 DMC 303		5	Thick	UL
	0936 DFC 301	5	Thin	UL
	0936 DFC 303	5	Thick	UL

DeviceNet™

Accessories

0909 UAC 101



Dust cover for unused M12 plugs.

RKV



Dust cover for unused 7/8" plugs.

ZVK | ZVKM



Dust cover for unused M12 and M8 sockets.

ZBS



Attachable labels, 10 pieces (7 x 14 mm).

ZBR 9/40



Attachable labels, 40 pieces (9 x 20 mm), suitable for all active compact bus modules.

ZBR 5/10



Attachable labels, 40 pieces (5 x 10 mm), suitable for all LioN-S bus modules.

Part Number	
0909 DNC109	
RKV	
ZVK	ZVKM
ZBS	
ZBR 9/40	ZBR 5/10



References

Cable Index and Connector Key/Pin Configurations

DeviceNet Wiring/Pin Digram

Connection 7/8"		Connection M12		Signal	7/8" to M12 Male, 5-Pole	7/8" to M12 Female, 5-Pole	Color
Male	Female	Male	Female				
				Shield	Pin 1	Pin 1	-
				+24 V DC	Pin 2	Pin 2	red
				0 V	Pin 3	Pin 3	black
				CAN_H	Pin 4	Pin 4	white
				CAN_L	Pin 5	Pin 5	blue

Fieldbus Color-Code-DeviceNet

Cable No.	Wire Color Code	Gauge	Material	Jacket Color	Outside Diameter	UL	CSA
253	blue/white red/black	2 x 0.25 mm² 2 x 0.34 mm²	**PUR,** Halogen-Free	Black	.264" / Ø 6.7 mm	AWM 20549	AWM I/II A/B
613	blue/white red/black	Stranded Pairs 1 x 2 x 18 AWG 1 X 2 x 15 AWG	**PVC - THICK**	Grey	.430" / Ø 11.0 mm	CMG/PLTC-ER	CMG
614	blue/white red/black	Stranded Pairs 1 x 2 x 22 AWG 1 X 2 x 24 AWG	**PVC - THIN**	Grey	.270" / Ø 6.9 mm	CMG/CL2	CMG
636	blue/white red/black	Stranded Pairs 1 x 2 x 16 AWG 1 X 2 x 18 AWG	**PVC - Tray**	Grey	.525" / Ø 13.3 mm	TC-ER	AWM I/II A/B
709	blue/white red/black	Stranded Pairs 1 x 2 x 16 AWG 1 X 2 x 20 AWG	**TPE - MID High-Flex**	Black	.380" / Ø 9.7 mm	AWM 20626	AWM I/II A/B
710	blue/white red/black	Stranded Pairs 1 x 2 x 22 AWG 1 X 2 x 24 AWG	**TPE - THIN High-Flex**	Black	.280" / Ø 7.1 mm	AWM 20626	AWM I/II A/B

Power Supply Cables

Cable No.	Wire Color Code	Gauge	Material	Jacket Color	Outside Diameter
203	2 x black* green/yellow * with numbering	3 x 1.00 mm² (128 x Ø 0.10mm)	**PUR**	Black	.252" / Ø 6.4 mm

References

Devicenet Module Conversion Cross Reference

DeviceNet Module Conversion Cross Reference		
Old Module	**Replaced By**	**Function**
0930 DSL 101	0930 DSL 108	16 Input
0930 DSL 102	0930 DSL 113	8 Input / 8 Output
0930 DSL 103	0930 DSL 107	8 Output
0930 DSL 301	0930 DSL 312	16 Input
0930 DSL 302	0930 DSL 314	8 Input / 8 Output
0930 DSL 303	0930 DSL 311	8 Output
0930 DSL 304	0930 DSL 312	16 Input, DSL 304 has one bus connector and DSL 312 has two
0930 DSL 305	0930 DSL 314	8 Input / 8 Output, DSL 305 has one bus connector and DSL 314 has two
0930 DSL 306	0930 DSL 311	8 Output, DSL 306 has one bus connector and DSL 311 has two

NOTE: In each case a new EDS-file is required and is available from our website (**http://www.beldensolutions.com/en/Service/Downloadcenter/Software_Lumberg/index.phtml**). The Devicenet scanner will require reconfiguring.

Additionally, if replacing modules **DSL 304** to **306** with the new modules a dust cover on the female bus connector is required. The old modules have only the male bus connector.



Part Number Index

Part Number	Page No.
0905 203 301/5 M	54
0905 203 301/10 M	54
0905 203 301/15 M	54
0905 203 302/0.6 M	54
0905 356 304/5 M	54
0905 356 304/10 M	54
0905 356 304/15 M	54
0905 356 305/0.6 M	54
0905 356 306/5 M	54
0905 356 306/10 M	54
0905 356 306/15 M	54
0905 356 311/5 M	54
0905 356 311/10 M	54
0905 356 311/15 M	54
0905 356 312/0.6 M	54
0905 356 313/5 M	54
0905 356 313/10 M	54
0905 356 313/15 M	54
0906 UAC 301	78-79
0906 UAC 302	78-79
0906 UAC 303	78-79
0906 UTP 101	64-65
0906 UTP 301	56-57
0906 UTP 302	58-59
0906 UTP 303	60-61
0906 UTP 312	62-63
0909 CTX 303	55
0909 CTX 304	55
0909 DNC109	88
0930 DSL 107	26
0930 DSL 108	18
0930 DSL 109	20
0930 DSL 113	34
0930 DSL 114	30
0930 DSL 311	28
0930 DSL 312	22
0930 DSL 313	24
0930 DSL 314	36
0930 DSL 315	32
0930 DSL 650	14
0930 DSL 651	12
0930 DSL 700	38
0930 DSL 701	16
0931 DNC 301	40
0935 253 101/1 M	42
0935 253 101/2 M	42
0935 253 101/3 M	42
0935 253 101/5 M	42
0935 253 102/1 M	42
0935 253 102/2 M	42
0935 253 102/3 M	42
0935 253 102/5 M	42
0935 253 103/0.3 M	42
0935 253 103/0.6 M	42
0935 253 103/1 M	42
0935 253 103/2 M	42
0935 253 103/3 M	42
0935 253 103/5 M	42
0935 253 103/10 M	42
0935 253 103/15 M	42
0935 253 103/20 M	42
0935 253 103/25 M	42
0935 253 104/1 M	
0935 253 104/3 M	42
0935 253 104/5 M	42
0935 253 104/10 M	42
0935 253 104/15 M	42
0935 253 105/1 M	42
0935 253 105/3 M	42
0935 253 105/5 M	42
0935 253 105/10 M	42
0935 253 105/15 M	42
0935 253 301/1 M	43
0935 253 301/3 M	43
0935 253 301/5 M	43
0935 253 302/1 M	43
0935 253 302/3 M	43
0935 253 302/5 M	43
0935 253 303/1 M	43
0935 253 303/3 M	43
0935 253 303/5 M	43
0935 613 301/0.3 M	50-51
0935 613 301/0.6 M	50-51
0935 613 301/1 M	50-51
0935 613 301/2 M	50-51
0935 613 301/3 M	50-51
0935 613 301/5 M	50-51
0935 613 301/10 M	50-51
0935 613 301/15 M	50-51
0935 613 302/0.3 M	50-51
0935 613 302/0.6 M	50-51
0935 613 302/1 M	50-51
0935 613 302/2 M	50-51
0935 613 302/3 M	50-51
0935 613 302/5 M	50-51
0935 613 302/10 M	50-51
0935 613 302/15 M	50-51
0935 613 303/0.3 M	50-51
0935 613 303/0.6 M	50-51
0935 613 303/1 M	50-51
0935 613 303/2 M	50-51
0935 613 303/3 M	50-51
0935 613 303/5 M	50-51
0935 613 303/10 M	50-51
0935 613 303/15 M	50-51
0935 614 101/0.3 M	44-45
0935 614 101/0.6 M	44-45
0935 614 101/1 M	44-45
0935 614 101/2 M	44-45
0935 614 101/3 M	44-45
0935 614 101/5 M	44-45

Part Number Index

Part Number	Page No.
0935 614 101/10 M	44-45
0935 614 101/15 M	44-45
0935 614 103/0.3 M	44-45
0935 614 103/0.6 M	44-45
0935 614 103/1 M	44-45
0935 614 103/2 M	44-45
0935 614 103/3 M	44-45
0935 614 103/5 M	44-45
0935 614 103/10 M	44-45
0935 614 103/15 M	44-45
0935 614 104/0.3 M	44-45
0935 614 104/0.6 M	44-45
0935 614 104/1 M	44-45
0935 614 104/2 M	44-45
0935 614 104/3 M	44-45
0935 614 104/5 M	44-45
0935 614 104/10 M	44-45
0935 614 104/15 M	44-45
0935 614 105/0.3 M	44-45
0935 614 105/0.6 M	44-45
0935 614 105/1 M	44-45
0935 614 105/2 M	44-45
0935 614 105/3 M	44-45
0935 614 105/5 M	44-45
0935 614 105/10 M	44-45
0935 614 105/15 M	44-45
0935 614 301/0.3 M	44-45
0935 614 301/0.6 M	44-45
0935 614 301/1 M	44-45
0935 614 301/2 M	44-45
0935 614 301/3 M	44-45
0935 614 301/5 M	44-45
0935 614 301/10 M	44-45
0935 614 301/15 M	44-45
0935 614 302/0.3 M	44-45
0935 614 302/0.6 M	44-45
0935 614 302/1 M	44-45
0935 614 302/2 M	44-45
0935 614 302/3 M	44-45
0935 614 302/5 M	44-45
0935 614 302/10 M	44-45
0935 614 302/15 M	44-45
0935 614 303/0.3 M	44-45
0935 614 303/0.6 M	44-45
0935 614 303/1 M	44-45
0935 614 303/2 M	44-45
0935 614 303/3 M	44-45
0935 614 303/5 M	44-45
0935 614 303/10 M	44-45
0935 614 303/15 M	44-45
0935 636 301/0.3 M	52-53
0935 636 301/0.6 M	52-53
0935 636 301/1 M	52-53
0935 636 301/2 M	52-53
0935 636 301/3 M	52-53
0935 636 301/5 M	52-53
0935 636 301/10 M	52-53
0935 636 301/15 M	52-53
0935 636 302/0.3 M	52-53
0935 636 302/0.6 M	52-53
0935 636 302/1 M	52-53
0935 636 302/2 M	52-53
0935 636 302/3 M	52-53
0935 636 302/5 M	52-53
0935 636 302/10 M	52-53
0935 636 302/15 M	52-53
0935 636 303/0.3 M	52-53
0935 636 303/0.6 M	52-53
0935 636 303/1 M	52-53
0935 636 303/2 M	52-53
0935 636 303/3 M	52-53
0935 636 303/5 M	52-53
0935 636 303/10 M	52-53
0935 636 303/15 M	52-53
0935 709 101/0.3 M	48-49
0935 709 101/0.6 M	48-49
0935 709 101/1 M	48-49
0935 709 101/2 M	48-49
0935 709 101/3 M	48-49
0935 709 101/5 M	48-49
0935 709 101/10 M	48-49
0935 709 101/15 M	48-49
0935 709 103/0.3 M	48-49
0935 709 103/0.6 M	48-49
0935 709 103/1 M	48-49
0935 709 103/2 M	48-49
0935 709 103/3 M	48-49
0935 709 103/5 M	48-49
0935 709 103/10 M	48-49
0935 709 103/15 M	48-49
0935 709 104/0.3 M	48-49
0935 709 104/0.6 M	48-49
0935 709 104/1 M	48-49
0935 709 104/2 M	48-49
0935 709 104/3 M	48-49
0935 709 104/5 M	48-49
0935 709 104/10 M	48-49
0935 709 104/15 M	48-49
0935 709 105/0.3 M	48-49
0935 709 105/0.6 M	48-49
0935 709 105/1 M	48-49
0935 709 105/2 M	48-49
0935 709 105/3 M	48-49
0935 709 105/5 M	48-49
0935 709 105/10 M	48-49
0935 709 105/15 M	48-49
0935 709 301/0.3 M	48-49
0935 709 301/0.6 M	48-49
0935 709 301/1 M	48-49
0935 709 301/2 M	48-49
0935 709 301/3 M	48-49



Part Number Index

Part Number	Page No.
0935 709 301/5 M	48-49
0935 709 301/10 M	48-49
0935 709 301/15 M	48-49
0935 709 302/0.3 M	48-49
0935 709 302/0.6 M	48-49
0935 709 302/1 M	48-49
0935 709 302/2 M	48-49
0935 709 302/3 M	48-49
0935 709 302/5 M	48-49
0935 709 302/10 M	48-49
0935 709 302/15 M	48-49
0935 709 303/0.3 M	48-49
0935 709 303/0.6 M	48-49
0935 709 303/1 M	48-49
0935 709 303/2 M	48-49
0935 709 303/3 M	48-49
0935 709 303/5 M	48-49
0935 709 303/10 M	48-49
0935 709 303/15 M	48-49
0935 710 101/0.3 M	46-47
0935 710 101/0.6 M	46-47
0935 710 101/1 M	46-47
0935 710 101/2 M	46-47
0935 710 101/3 M	46-47
0935 710 101/5 M	46-47
0935 710 101/10 M	46-47
0935 710 101/15 M	46-47
0935 710 103/0.3 M	46-47
0935 710 103/0.6 M	46-47
0935 710 103/1 M	46-47
0935 710 103/2 M	46-47
0935 710 103/3 M	46-47
0935 710 103/5 M	46-47
0935 710 103/10 M	46-47
0935 710 103/15 M	46-47
0935 710 104/0.3 M	46-47
0935 710 104/0.6 M	46-47
0935 710 104/1 M	46-47
0935 710 104/2 M	46-47
0935 710 104/3 M	46-47
0935 710 104/5 M	46-47
0935 710 104/10 M	46-47
0935 710 104/15 M	46-47
0935 710 105/0.3 M	46-47
0935 710 105/0.6 M	46-47
0935 710 105/1 M	46-47
0935 710 105/2 M	46-47
0935 710 105/3 M	46-47
0935 710 105/5 M	46-47
0935 710 105/10 M	46-47
0935 710 105/15 M	46-47
0935 710 301/0.3 M	46-47
0935 710 301/0.6 M	46-47
0935 710 301/1 M	46-47
0935 710 301/2 M	46-47
0935 710 301/3 M	46-47
0935 710 301/5 M	46-47
0935 710 301/10 M	46-47
0935 710 301/15 M	46-47
0935 710 302/0.3 M	46-47
0935 710 302/0.6 M	46-47
0935 710 302/1 M	46-47
0935 710 302/2 M	46-47
0935 710 302/3 M	46-47
0935 710 302/5 M	46-47
0935 710 302/10 M	46-47
0935 710 302/15 M	46-47
0935 710 303/0.3 M	46-47
0935 710 303/0.6 M	46-47
0935 710 303/1 M	46-47
0935 710 303/2 M	46-47
0935 710 303/3 M	46-47
0935 710 303/5 M	46-47
0935 710 303/10 M	46-47
0935 710 303/15 M	46-47
0936 DFC 101	82-83
0936 DFC 102	84-85
0936 DFC 151/0.3 M	66-67
0936 DFC 152/2 M	68-69
0936 DFC 301	86-87
0936 DFC 303	86-87
0936 DFC 352/0.3 M	72-73
0936 DFC 353/1 M	74-75
0936 DFC 353/2 M	74-75
0936 DFC 353/5 M	74-75
0936 DFC 355/1 M	76-77
0936 DFC 355/2 M	76-77
0936 DFC 355/3 M	76-77
0936 DFC 355/4 M	76-77
0936 DFC 355/5 M	76-77
0936 DMC 101	82-83
0936 DMC 102	84-85
0936 DMC 151/0.3 M	66-67
0936 DMC 152/2 M	68-69
0936 DMC 301	86-87
0936 DMC 303	86-87
0936 DMC 352/0.3 M	72-73
0936 DMC 353/0.5 M	74-75
0936 DMC 353/1 M	74-75
0936 DMC 353/2 M	74-75
0936 DMC 353/5 M	74-75
0936 DMC 355/1 M	76-77
0936 DMC 355/2 M	76-77
0936 DMC 355/3 M	76-77
0936 DMC 355/4 M	76-77
0936 DMC 355/5 M	76-77
0939 CTX 101	55
0939 CTX 102	55
0939 CTX 105	55
0939 CTX 106	55
0939 CTX 301	55

Part Number Index

Part Number	Page No.
0939 CTX 302	55
FWD 5	80-81
RKV	88
RKWF5-PCB	70-71
RSWF5-PCB	70-71
ZBR 5/10	88
ZBR 9/40	88
ZBS	88
ZVK	88
ZVKM	88

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