

# DEVICENET SELECTION GUIDE

**BradCommunications**<sup>™</sup>

**BradConnectivity**<sup>™</sup>

**BradControl**<sup>™</sup>



**Woodhead Industries, a Division of Molex** "Empowers the Industrial Infrastructure" with innovative communication, control and connectivity solutions for a wide range of DeviceNet applications - from the device and sensor level, to the operations and supervisory level, to connectivity with enterprise business and operations systems.

The success of an Industrial DeviceNet relies on the quality and performance of its underlying infrastructure - all the devices, components and pathways needed to support the network's communications, connectivity and control capabilities. Our Brad<sup>®</sup> automation and networking solutions are engineered to facilitate reliable information flow, from machines to PCs and PLCs, and all the way from the plant floor to the enterprise.

### Brad<sup>®</sup> Automation Solutions

Our Brad<sup>®</sup> product lines - including such globally recognized names as Brad Harrison<sup>®</sup>, applicom<sup>®</sup>, SST<sup>™</sup>, mPm<sup>®</sup>, and RJ-Lnxx<sup>®</sup> - are designed and built industrial-tough to ensure the flexibility, interoperability and rock-solid performance of your DeviceNet applications. Our industrial network solutions include:

- **BradCommunications<sup>™</sup>** - Network interface cards, PLC backplanes, switches, gateways, simulation software, diagnostic tools and embedded software stacks
- **BradConnectivity<sup>™</sup>** - Connectors, cordsets and distribution boxes for sensor, actuator and bus network applications
- **BradControl<sup>™</sup>** - Network I/O for on-machine and in-cabinet applications
- **BradPower<sup>™</sup>** - Modular wiring systems for machine power distribution and motor control

Woodhead Industries, a Division of Molex, operates from 21 locations in 10 countries spanning North America, Europe and Asia/Pacific, so we have the resources to assist you locally with all of your DeviceNet project needs.

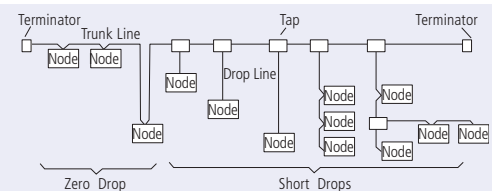
## DeviceNet Overview\*



DeviceNet is a digital, multi-drop network that connects and serves as a communication network between industrial controllers and I/O devices. Each device and/or controller is a node on the network. DeviceNet is a producer-consumer network that supports multiple communication hierarchies and message prioritization. DeviceNet systems can be configured to operate in a master-slave or a distributed control architecture using peer-to-peer communication. DeviceNet systems offer a single point of connection for configuration and control by supporting both I/O and explicit messaging. DeviceNet also has the unique feature of having power on the network.

<b>Network Size</b>	<b>Up to 64 Nodes</b>
Network Length	Selectable end-to-end network distance varies with speed: 125 Kbps 500 m (1,640 ft) 250 Kbps 250 m (820 ft) 500 Kbps 100 m (328 ft)
Data Packets	0-8 bytes
Bus Topology	Linear (trunkline/dropline); power and signal on the same network cable
Bus Addressing	Peer-to-Peer with Multi-Cast (one-to-many); Multi-Master and Master/Slave special case; polled of change-of-state (exception-based)
System Features	Selectable end-to-end network distance varies with speed

DeviceNet uses a trunk-line/drop-line topology that provides separate twisted pair busses for both signal and power distribution.



Thick or thin cable can be used for either trunklines or droplines. End-to-end network length varies with data rate and cable thickness as shown below:

Network Size	125 KBPS	250 KBPS	500 KBPS
Thick Trunk Length	500 m (1,640 ft)	250 m (820 ft)	100 m (328 ft)
Thin Trunk Length	100 m (328 ft)	100 m (328 ft)	100 m (328 ft)
Flat Trunk Length	420 m (1,378 ft)	200 m (656 ft)	75 m (246 ft)
Maximum Drop Length	6 m (20 ft)	6 m (20 ft)	6 m (20 ft)
Cumulative Drop Length	156 m (512 ft)	78 m (256 ft)	39 m (128 ft)

(\*) - Source ODVA web site



## BUS CONNECTIVITY

### Trunk Cordsets



- Plug-and-play connection between DeviceNet nodes
- Mini-Change® to Mini-Change® cordsets
- Single and double-ended
- Straight and 90°
- Standard and application-specific lengths

#### Characteristics

- Rugged, IP-68 rated connectors for continual connection integrity in industrial environments
- Phosphor-bronze contacts for greater reliability
- Variety of cable types, cable exit, coupling nut and length options for maximum flexibility

### Trunk Receptacles



- Connects the external trunk line with an enclosure
- Mini-Change® receptacles with DeviceNet color rotation
- Male and female
- Front-panel mount
- Bulkhead feed-through
- PCB-mount or Cable lead

#### Characteristics

- A variety of options allows for maximum flexibility in connecting device nodes
- Bulkhead version features rugged keyways for positive alignment of connections

### Drop Cordsets



- Connect tees or ports on drop distribution boxes to active devices
- Mini-Change® to Micro-Change® (M12) cordsets, Micro-Change® (M12) to Micro-Change® (M12) cordsets or Micro-Change® (M12) to Nano-Change® (M8) cordsets
- Single and double-ended
- Straight and 90°
- Standard and application-specific lengths

#### Characteristics

- Rugged, IP-68 rated connectors for continued connection integrity in industrial environments
- Variety of cable types, cable exit, form factor, coupling nut and length options for maximum flexibility

### Drop Receptacles



- Connects an external drop-line with an enclosure
- Micro-Change® (M12) receptacles
- Male and female
- Front-panel mount
- Bulkhead feed-through
- Wire leads or PCB-mount
- Straight and 90° version

#### Characteristics

- A variety of options allows for maximum flexibility in connecting device nodes
- Bulkhead version features keyways for positive alignment of connections
- PCB version features space saving small footprint

### Tees



- Tees enable tapping into trunk line to add drop lines or devices
- Optional diagnostic tee monitors real-time power fluctuations on the bus and provides visual multi-colored feedback

#### Characteristics

- Phosphor bronze contacts for greatest reliability
- Variety of Mini-Change® to Micro-Change® (M12) cordset configurations for installation flexibility

### Trunk and Drop Distribution Boxes



- Trunk distribution boxes enable branching/extension of the trunk line Drop distribution boxes consolidate multiple drop lines back to the trunk
- Eliminates the need to have numerous tees connected near a single point
- 4, 6, 8 and 14-port versions

#### Characteristics

- Versions with home-run connectors and with molded home-run cable available for maximum system flexibility
- Rugged housing and connectors designed to withstand harsh industrial environments

### Field Attachable Connectors



- Field termination for specific length or repair
- Internal and external threads
- Color-coded screw terminators make for error free field installation

#### Characteristics

- Accept a wide range of DeviceNet cables for maximum installation flexibility

### Trunk Gender Changers



- Change connection interface from male to female or visa-versa
- Female-to-Male, Straight and 90° versions
- Right angle version specially designed for tight spaces

#### Characteristics

- Phosphor bronze contacts for greatest reliability

### Termination Resistors



- Used to terminate end of data line
- Trunk and drop versions
- LED diagnostic versions

#### Characteristics

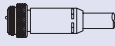

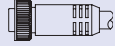


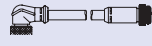
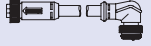
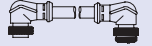
- Phosphor bronze contacts for greatest reliability
- Diagnostic versions indicate power connection and correct polarity



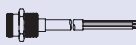
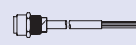
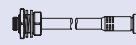
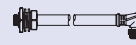

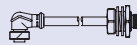





CONNECTORS, CORDSETS AND DISTRIBUTION BOXES FOR SENSOR, ACTUATOR AND BUS NETWORK APPLICATIONS

## TRUNK CORDSETS - Order Number

SINGLE-ENDED MINI-CHANGE® CORDSETS					DOUBLE-ENDED MINI-CHANGE® CORDSETS (FEMALE/MALE)			
								
MALE STRAIGHT	MALE 90°	FEMALE STRAIGHT	FEMALE 90°		STRAIGHT/STRAIGHT	90°/STRAIGHT	STRAIGHT/90°	90°/90°
<b>THICK STANDARD CABLE [1]</b>								
0.6M	DN01A-M006	DN09A-M006	DN10A-M006	DN90A-M006	DN11A-M006	DN91A-M006	DN19A-M006	DN99A-M006
1M	DN01A-M010	DN09A-M010	DN10A-M010	DN90A-M010	DN11A-M010	DN91A-M010	DN19A-M010	DN99A-M010
2M	DN01A-M020	DN09A-M020	DN10A-M020	DN90A-M020	DN11A-M020	DN91A-M020	DN19A-M020	DN99A-M020
3M	DN01A-M030	DN09A-M030	DN10A-M030	DN90A-M030	DN11A-M030	DN91A-M030	DN19A-M030	DN99A-M030
4M	DN01A-M040	DN09A-M040	DN10A-M040	DN90A-M040	DN11A-M040	DN91A-M040	DN19A-M040	DN99A-M040
5M	DN01A-M050	DN09A-M050	DN10A-M050	DN90A-M050	DN11A-M050	DN91A-M050	DN19A-M050	DN99A-M050
10M	DN01A-M100	DN09A-M100	DN10A-M100	DN90A-M100	DN11A-M100	DN91A-M100	DN19A-M100	DN99A-M100
<b>THICK FLEX-RATED CABLE [1]</b>								
0.6M	DNF01A-M006	DNF09A-M006	DNF10A-M006	DNF90A-M006	DNF11A-M006	DNF91A-M006	DNF19A-M006	DNF99A-M006
1M	DNF01A-M010	DNF09A-M010	DNF10A-M010	DNF90A-M010	DNF11A-M010	DNF91A-M010	DNF19A-M010	DNF99A-M010
2M	DNF01A-M020	DNF09A-M020	DNF10A-M020	DNF90A-M020	DNF11A-M020	DNF91A-M020	DNF19A-M020	DNF99A-M020
3M	DNF01A-M030	DNF09A-M030	DNF10A-M030	DNF90A-M030	DNF11A-M030	DNF91A-M030	DNF19A-M030	DNF99A-M030
4M	DNF01A-M040	DNF09A-M040	DNF10A-M040	DNF90A-M040	DNF11A-M040	DNF91A-M040	DNF19A-M040	DNF99A-M040
5M	DNF01A-M050	DNF09A-M050	DNF10A-M050	DNF90A-M050	DNF11A-M050	DNF91A-M050	DNF19A-M050	DNF99A-M050
10M	DNF01A-M100	DNF09A-M100	DNF10A-M100	DNF90A-M100	DNF11A-M100	DNF91A-M100	DNF19A-M100	DNF99A-M100
<b>THICK CLASS 1/TRAY RATED CABLE [1]</b>								
0.6M	DNE01A-M006	DNE09A-M006	DNE10A-M006	DNE90A-M006	DNE11A-M006	DNE91A-M006	DNE19A-M006	DNE99A-M006
1M	DNE01A-M010	DNE09A-M010	DNE10A-M010	DNE90A-M010	DNE11A-M010	DNE91A-M010	DNE19A-M010	DNE99A-M010
2M	DNE01A-M020	DNE09A-M020	DNE10A-M020	DNE90A-M020	DNE11A-M020	DNE91A-M020	DNE19A-M020	DNE99A-M020
3M	DNE01A-M030	DNE09A-M030	DNE10A-M030	DNE90A-M030	DNE11A-M030	DNE91A-M030	DNE19A-M030	DNE99A-M030
4M	DNE01A-M040	DNE09A-M040	DNE10A-M040	DNE90A-M040	DNE11A-M040	DNE91A-M040	DNE19A-M040	DNE99A-M040
5M	DNE01A-M050	DNE09A-M050	DNE10A-M050	DNE90A-M050	DNE11A-M050	DNE91A-M050	DNE19A-M050	DNE99A-M050
10M	DNE01A-M100	DNE09A-M100	DNE10A-M100	DNE90A-M100	DNE11A-M100	DNE91A-M100	DNE19A-M100	DNE99A-M100
<b>MID CABLE [1]</b>								
0.6M	DNB01A-M006	DNB09A-M006	DNB10A-M006	DNB90A-M006	DNB11A-M006	DNB91A-M006	DNB19A-M006	DNB99A-M006
1M	DNB01A-M010	DNB09A-M010	DNB10A-M010	DNB90A-M010	DNB11A-M010	DNB91A-M010	DNB19A-M010	DNB99A-M010
2M	DNB01A-M020	DNB09A-M020	DNB10A-M020	DNB90A-M020	DNB11A-M020	DNB91A-M020	DNB19A-M020	DNB99A-M020
3M	DNB01A-M030	DNB09A-M030	DNB10A-M030	DNB90A-M030	DNB11A-M030	DNB91A-M030	DNB19A-M030	DNB99A-M030
4M	DNB01A-M040	DNB09A-M040	DNB10A-M040	DNB90A-M040	DNB11A-M040	DNB91A-M040	DNB19A-M040	DNB99A-M040
5M	DNB01A-M050	DNB09A-M050	DNB10A-M050	DNB90A-M050	DNB11A-M050	DNB91A-M050	DNB19A-M050	DNB99A-M050
10M	DNB01A-M100	DNB09A-M100	DNB10A-M100	DNB90A-M100	DNB11A-M100	DNB91A-M100	DNB19A-M100	DNB99A-M100

## TRUNK RECEPTACLES - Order Number

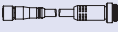
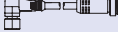


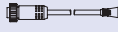



FRONT PANEL MOUNT W/CABLE 1/2" - 14NPT			DOUBLE-ENDED BACK PANEL MOUNT TO MINI-CHANGE® RECEPTACLES (FEMALE/MALE) 1/2"-14NPT			
						
MALE STRAIGHT	FEMALE STRAIGHT		RECEPT/STRAIGHT	RECEPT/90°	STRAIGHT/RECEPT	90°/RECEPT
<b>THICK STANDARD CABLE [1]</b>						
0.5M	DN5100-M005	DN5000-M005	DN5210A-M005	DN5290A-M005	DN5301A-M005	DN5309A-M005
1M	DN5100-M010	DN5000-M010	DN5210A-M010	DN5290A-M010	DN5301A-M010	DN5309A-M010
2M	DN5100-M020	DN5000-M020	DN5210A-M020	DN5290A-M020	DN5301A-M020	DN5309A-M020
5M	DN5100-M050	DN5000-M050	DN5210A-M050	DN5290A-M050	DN5301A-M050	DN5309A-M050
<b>MID CABLE [1]</b>						
0.5M	DNB5100-M005	DNB5000-M005	DNB5210A-M005	DNB5290A-M005	DNB5301A-M005	DNB5309A-M005
1M	DNB5100-M010	DNB5000-M010	DNB5210A-M010	DNB5290A-M010	DNB5301A-M010	DNB5309A-M010
2M	DNB5100-M020	DNB5000-M020	DNB5210A-M020	DNB5290A-M020	DNB5301A-M020	DNB5309A-M020
5M	DNB5100-M050	DNB5000-M050	DNB5210A-M050	DNB5290A-M050	DNB5301A-M050	DNB5309A-M050
<b>PCB MOUNT 1/2" - 14NPT</b>			<b>BULKHEAD FEED-THRU 1/2" - 14NPT</b>			
						
MALE STRAIGHT	FEMALE STRAIGHT		MALE STRAIGHT/FEMALE STRAIGHT			
67-0065	67-0075		1R5030			

[1] The standard coupling nut is black epoxy-coated zinc. For stainless steel, replace "A" with "SS". For nickel-brass, replace "A" with "NB"











CONNECTORS, CORDSETS AND DISTRIBUTION BOXES FOR SENSOR, ACTUATOR AND BUS NETWORK APPLICATIONS

## DROP CORDSETS - Order Number

DOUBLE-ENDED MICRO-CHANGE® (M12) TO MINI-CHANGE® CORDSETS (FEMALE/MALE)					DOUBLE-ENDED MINI-CHANGE® TO MICROCHANGE® (M12) CORDSETS (FEMALE/MALE)																																																																																																																																																																																												
																																																																																																																																																																																																	
STRAIGHT/STRAIGHT		90° STRAIGHT		STRAIGHT/90°		90°/90°		STRAIGHT/STRAIGHT		90°/STRAIGHT		STRAIGHT/90°		90°/90°																																																																																																																																																																																			
<b>THIN STANDARD CABLE [1]</b>																																																																																																																																																																																																	
0.6M	DND21A-M006	DND31A-M006	DND29A-M006	DND39A-M006	DND12A-M006	DND92A-M006	DND13A-M006	DND93A-M006	1M	DND21A-M010	DND31A-M010	DND29A-M010	DND39A-M010	DND12A-M010	DND92A-M010	DND13A-M010	DND93A-M010	2M	DND21A-M020	DND31A-M020	DND29A-M020	DND39A-M020	DND12A-M020	DND92A-M020	DND13A-M020	DND93A-M020	3M	DND21A-M030	DND31A-M030	DND29A-M030	DND39A-M030	DND12A-M030	DND92A-M030	DND13A-M030	DND93A-M030	4M	DND21A-M040	DND31A-M040	DND29A-M040	DND39A-M040	DND12A-M040	DND92A-M040	DND13A-M040	DND93A-M040	5M	DND21A-M050	DND31A-M050	DND29A-M050	DND39A-M050	DND12A-M050	DND92A-M050	DND13A-M050	DND93A-M050	<b>THIN FLEX-RATED CABLE [1]</b>																0.6M	DNDF21A-M006	DNDF31A-M006	DNDF29A-M006	DNDF39A-M006	DNDF12A-M006	DNDF92A-M006	DNDF13A-M006	DNDF93A-M006	1M	DNDF21A-M010	DNDF31A-M010	DNDF29A-M010	DNDF39A-M010	DNDF12A-M010	DNDF92A-M010	DNDF13A-M010	DNDF93A-M010	2M	DNDF21A-M020	DNDF31A-M020	DNDF29A-M020	DNDF39A-M020	DNDF12A-M020	DNDF92A-M020	DNDF13A-M020	DNDF93A-M020	3M	DNDF21A-M030	DNDF31A-M030	DNDF29A-M030	DNDF39A-M030	DNDF12A-M030	DNDF92A-M030	DNDF13A-M030	DNDF93A-M030	4M	DNDF21A-M040	DNDF31A-M040	DNDF29A-M040	DNDF39A-M040	DNDF12A-M040	DNDF92A-M040	DNDF13A-M040	DNDF93A-M040	5M	DNDF21A-M050	DNDF31A-M050	DNDF29A-M050	DNDF39A-M050	DNDF12A-M050	DNDF92A-M050	DNDF13A-M050	DNDF93A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG21A-M006	DNDG31A-M006	DNDG29A-M006	DNDG39A-M006	DNDG12A-M006	DNDG92A-M006	DNDG13A-M006	DNDG93A-M006	1M	DNDG21A-M010	DNDG31A-M010	DNDG29A-M010	DNDG39A-M010	DNDG12A-M010	DNDG92A-M010	DNDG13A-M010	DNDG93A-M010	2M	DNDG21A-M020	DNDG31A-M020	DNDG29A-M020	DNDG39A-M020	DNDG12A-M020	DNDG92A-M020	DNDG13A-M020	DNDG93A-M020	3M	DNDG21A-M030	DNDG31A-M030	DNDG29A-M030	DNDG39A-M030	DNDG12A-M030	DNDG92A-M030	DNDG13A-M030	DNDG93A-M030	4M	DNDG21A-M040	DNDG31A-M040	DNDG29A-M040	DNDG39A-M040	DNDG12A-M040	DNDG92A-M040	DNDG13A-M040	DNDG93A-M040	5M	DNDG21A-M050	DNDG31A-M050	DNDG29A-M050	DNDG39A-M050	DNDG12A-M050	DNDG92A-M050	DNDG13A-M050	DNDG93A-M050
2M	DND21A-M020	DND31A-M020	DND29A-M020	DND39A-M020	DND12A-M020	DND92A-M020	DND13A-M020	DND93A-M020	3M	DND21A-M030	DND31A-M030	DND29A-M030	DND39A-M030	DND12A-M030	DND92A-M030	DND13A-M030	DND93A-M030	4M	DND21A-M040	DND31A-M040	DND29A-M040	DND39A-M040	DND12A-M040	DND92A-M040	DND13A-M040	DND93A-M040	5M	DND21A-M050	DND31A-M050	DND29A-M050	DND39A-M050	DND12A-M050	DND92A-M050	DND13A-M050	DND93A-M050	<b>THIN FLEX-RATED CABLE [1]</b>																0.6M	DNDF21A-M006	DNDF31A-M006	DNDF29A-M006	DNDF39A-M006	DNDF12A-M006	DNDF92A-M006	DNDF13A-M006	DNDF93A-M006	1M	DNDF21A-M010	DNDF31A-M010	DNDF29A-M010	DNDF39A-M010	DNDF12A-M010	DNDF92A-M010	DNDF13A-M010	DNDF93A-M010	2M	DNDF21A-M020	DNDF31A-M020	DNDF29A-M020	DNDF39A-M020	DNDF12A-M020	DNDF92A-M020	DNDF13A-M020	DNDF93A-M020	3M	DNDF21A-M030	DNDF31A-M030	DNDF29A-M030	DNDF39A-M030	DNDF12A-M030	DNDF92A-M030	DNDF13A-M030	DNDF93A-M030	4M	DNDF21A-M040	DNDF31A-M040	DNDF29A-M040	DNDF39A-M040	DNDF12A-M040	DNDF92A-M040	DNDF13A-M040	DNDF93A-M040	5M	DNDF21A-M050	DNDF31A-M050	DNDF29A-M050	DNDF39A-M050	DNDF12A-M050	DNDF92A-M050	DNDF13A-M050	DNDF93A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG21A-M006	DNDG31A-M006	DNDG29A-M006	DNDG39A-M006	DNDG12A-M006	DNDG92A-M006	DNDG13A-M006	DNDG93A-M006	1M	DNDG21A-M010	DNDG31A-M010	DNDG29A-M010	DNDG39A-M010	DNDG12A-M010	DNDG92A-M010	DNDG13A-M010	DNDG93A-M010	2M	DNDG21A-M020	DNDG31A-M020	DNDG29A-M020	DNDG39A-M020	DNDG12A-M020	DNDG92A-M020	DNDG13A-M020	DNDG93A-M020	3M	DNDG21A-M030	DNDG31A-M030	DNDG29A-M030	DNDG39A-M030	DNDG12A-M030	DNDG92A-M030	DNDG13A-M030	DNDG93A-M030	4M	DNDG21A-M040	DNDG31A-M040	DNDG29A-M040	DNDG39A-M040	DNDG12A-M040	DNDG92A-M040	DNDG13A-M040	DNDG93A-M040	5M	DNDG21A-M050	DNDG31A-M050	DNDG29A-M050	DNDG39A-M050	DNDG12A-M050	DNDG92A-M050	DNDG13A-M050	DNDG93A-M050																		
4M	DND21A-M040	DND31A-M040	DND29A-M040	DND39A-M040	DND12A-M040	DND92A-M040	DND13A-M040	DND93A-M040	5M	DND21A-M050	DND31A-M050	DND29A-M050	DND39A-M050	DND12A-M050	DND92A-M050	DND13A-M050	DND93A-M050	<b>THIN FLEX-RATED CABLE [1]</b>																0.6M	DNDF21A-M006	DNDF31A-M006	DNDF29A-M006	DNDF39A-M006	DNDF12A-M006	DNDF92A-M006	DNDF13A-M006	DNDF93A-M006	1M	DNDF21A-M010	DNDF31A-M010	DNDF29A-M010	DNDF39A-M010	DNDF12A-M010	DNDF92A-M010	DNDF13A-M010	DNDF93A-M010	2M	DNDF21A-M020	DNDF31A-M020	DNDF29A-M020	DNDF39A-M020	DNDF12A-M020	DNDF92A-M020	DNDF13A-M020	DNDF93A-M020	3M	DNDF21A-M030	DNDF31A-M030	DNDF29A-M030	DNDF39A-M030	DNDF12A-M030	DNDF92A-M030	DNDF13A-M030	DNDF93A-M030	4M	DNDF21A-M040	DNDF31A-M040	DNDF29A-M040	DNDF39A-M040	DNDF12A-M040	DNDF92A-M040	DNDF13A-M040	DNDF93A-M040	5M	DNDF21A-M050	DNDF31A-M050	DNDF29A-M050	DNDF39A-M050	DNDF12A-M050	DNDF92A-M050	DNDF13A-M050	DNDF93A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG21A-M006	DNDG31A-M006	DNDG29A-M006	DNDG39A-M006	DNDG12A-M006	DNDG92A-M006	DNDG13A-M006	DNDG93A-M006	1M	DNDG21A-M010	DNDG31A-M010	DNDG29A-M010	DNDG39A-M010	DNDG12A-M010	DNDG92A-M010	DNDG13A-M010	DNDG93A-M010	2M	DNDG21A-M020	DNDG31A-M020	DNDG29A-M020	DNDG39A-M020	DNDG12A-M020	DNDG92A-M020	DNDG13A-M020	DNDG93A-M020	3M	DNDG21A-M030	DNDG31A-M030	DNDG29A-M030	DNDG39A-M030	DNDG12A-M030	DNDG92A-M030	DNDG13A-M030	DNDG93A-M030	4M	DNDG21A-M040	DNDG31A-M040	DNDG29A-M040	DNDG39A-M040	DNDG12A-M040	DNDG92A-M040	DNDG13A-M040	DNDG93A-M040	5M	DNDG21A-M050	DNDG31A-M050	DNDG29A-M050	DNDG39A-M050	DNDG12A-M050	DNDG92A-M050	DNDG13A-M050	DNDG93A-M050																																				
<b>THIN FLEX-RATED CABLE [1]</b>																																																																																																																																																																																																	
0.6M	DNDF21A-M006	DNDF31A-M006	DNDF29A-M006	DNDF39A-M006	DNDF12A-M006	DNDF92A-M006	DNDF13A-M006	DNDF93A-M006	1M	DNDF21A-M010	DNDF31A-M010	DNDF29A-M010	DNDF39A-M010	DNDF12A-M010	DNDF92A-M010	DNDF13A-M010	DNDF93A-M010	2M	DNDF21A-M020	DNDF31A-M020	DNDF29A-M020	DNDF39A-M020	DNDF12A-M020	DNDF92A-M020	DNDF13A-M020	DNDF93A-M020	3M	DNDF21A-M030	DNDF31A-M030	DNDF29A-M030	DNDF39A-M030	DNDF12A-M030	DNDF92A-M030	DNDF13A-M030	DNDF93A-M030	4M	DNDF21A-M040	DNDF31A-M040	DNDF29A-M040	DNDF39A-M040	DNDF12A-M040	DNDF92A-M040	DNDF13A-M040	DNDF93A-M040	5M	DNDF21A-M050	DNDF31A-M050	DNDF29A-M050	DNDF39A-M050	DNDF12A-M050	DNDF92A-M050	DNDF13A-M050	DNDF93A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG21A-M006	DNDG31A-M006	DNDG29A-M006	DNDG39A-M006	DNDG12A-M006	DNDG92A-M006	DNDG13A-M006	DNDG93A-M006	1M	DNDG21A-M010	DNDG31A-M010	DNDG29A-M010	DNDG39A-M010	DNDG12A-M010	DNDG92A-M010	DNDG13A-M010	DNDG93A-M010	2M	DNDG21A-M020	DNDG31A-M020	DNDG29A-M020	DNDG39A-M020	DNDG12A-M020	DNDG92A-M020	DNDG13A-M020	DNDG93A-M020	3M	DNDG21A-M030	DNDG31A-M030	DNDG29A-M030	DNDG39A-M030	DNDG12A-M030	DNDG92A-M030	DNDG13A-M030	DNDG93A-M030	4M	DNDG21A-M040	DNDG31A-M040	DNDG29A-M040	DNDG39A-M040	DNDG12A-M040	DNDG92A-M040	DNDG13A-M040	DNDG93A-M040	5M	DNDG21A-M050	DNDG31A-M050	DNDG29A-M050	DNDG39A-M050	DNDG12A-M050	DNDG92A-M050	DNDG13A-M050	DNDG93A-M050																																																																						
2M	DNDF21A-M020	DNDF31A-M020	DNDF29A-M020	DNDF39A-M020	DNDF12A-M020	DNDF92A-M020	DNDF13A-M020	DNDF93A-M020	3M	DNDF21A-M030	DNDF31A-M030	DNDF29A-M030	DNDF39A-M030	DNDF12A-M030	DNDF92A-M030	DNDF13A-M030	DNDF93A-M030	4M	DNDF21A-M040	DNDF31A-M040	DNDF29A-M040	DNDF39A-M040	DNDF12A-M040	DNDF92A-M040	DNDF13A-M040	DNDF93A-M040	5M	DNDF21A-M050	DNDF31A-M050	DNDF29A-M050	DNDF39A-M050	DNDF12A-M050	DNDF92A-M050	DNDF13A-M050	DNDF93A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG21A-M006	DNDG31A-M006	DNDG29A-M006	DNDG39A-M006	DNDG12A-M006	DNDG92A-M006	DNDG13A-M006	DNDG93A-M006	1M	DNDG21A-M010	DNDG31A-M010	DNDG29A-M010	DNDG39A-M010	DNDG12A-M010	DNDG92A-M010	DNDG13A-M010	DNDG93A-M010	2M	DNDG21A-M020	DNDG31A-M020	DNDG29A-M020	DNDG39A-M020	DNDG12A-M020	DNDG92A-M020	DNDG13A-M020	DNDG93A-M020	3M	DNDG21A-M030	DNDG31A-M030	DNDG29A-M030	DNDG39A-M030	DNDG12A-M030	DNDG92A-M030	DNDG13A-M030	DNDG93A-M030	4M	DNDG21A-M040	DNDG31A-M040	DNDG29A-M040	DNDG39A-M040	DNDG12A-M040	DNDG92A-M040	DNDG13A-M040	DNDG93A-M040	5M	DNDG21A-M050	DNDG31A-M050	DNDG29A-M050	DNDG39A-M050	DNDG12A-M050	DNDG92A-M050	DNDG13A-M050	DNDG93A-M050																																																																																								
4M	DNDF21A-M040	DNDF31A-M040	DNDF29A-M040	DNDF39A-M040	DNDF12A-M040	DNDF92A-M040	DNDF13A-M040	DNDF93A-M040	5M	DNDF21A-M050	DNDF31A-M050	DNDF29A-M050	DNDF39A-M050	DNDF12A-M050	DNDF92A-M050	DNDF13A-M050	DNDF93A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG21A-M006	DNDG31A-M006	DNDG29A-M006	DNDG39A-M006	DNDG12A-M006	DNDG92A-M006	DNDG13A-M006	DNDG93A-M006	1M	DNDG21A-M010	DNDG31A-M010	DNDG29A-M010	DNDG39A-M010	DNDG12A-M010	DNDG92A-M010	DNDG13A-M010	DNDG93A-M010	2M	DNDG21A-M020	DNDG31A-M020	DNDG29A-M020	DNDG39A-M020	DNDG12A-M020	DNDG92A-M020	DNDG13A-M020	DNDG93A-M020	3M	DNDG21A-M030	DNDG31A-M030	DNDG29A-M030	DNDG39A-M030	DNDG12A-M030	DNDG92A-M030	DNDG13A-M030	DNDG93A-M030	4M	DNDG21A-M040	DNDG31A-M040	DNDG29A-M040	DNDG39A-M040	DNDG12A-M040	DNDG92A-M040	DNDG13A-M040	DNDG93A-M040	5M	DNDG21A-M050	DNDG31A-M050	DNDG29A-M050	DNDG39A-M050	DNDG12A-M050	DNDG92A-M050	DNDG13A-M050	DNDG93A-M050																																																																																																										
<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																																																																																																																																																																																																	
0.6M	DNDG21A-M006	DNDG31A-M006	DNDG29A-M006	DNDG39A-M006	DNDG12A-M006	DNDG92A-M006	DNDG13A-M006	DNDG93A-M006	1M	DNDG21A-M010	DNDG31A-M010	DNDG29A-M010	DNDG39A-M010	DNDG12A-M010	DNDG92A-M010	DNDG13A-M010	DNDG93A-M010	2M	DNDG21A-M020	DNDG31A-M020	DNDG29A-M020	DNDG39A-M020	DNDG12A-M020	DNDG92A-M020	DNDG13A-M020	DNDG93A-M020	3M	DNDG21A-M030	DNDG31A-M030	DNDG29A-M030	DNDG39A-M030	DNDG12A-M030	DNDG92A-M030	DNDG13A-M030	DNDG93A-M030	4M	DNDG21A-M040	DNDG31A-M040	DNDG29A-M040	DNDG39A-M040	DNDG12A-M040	DNDG92A-M040	DNDG13A-M040	DNDG93A-M040	5M	DNDG21A-M050	DNDG31A-M050	DNDG29A-M050	DNDG39A-M050	DNDG12A-M050	DNDG92A-M050	DNDG13A-M050	DNDG93A-M050																																																																																																																																												
2M	DNDG21A-M020	DNDG31A-M020	DNDG29A-M020	DNDG39A-M020	DNDG12A-M020	DNDG92A-M020	DNDG13A-M020	DNDG93A-M020	3M	DNDG21A-M030	DNDG31A-M030	DNDG29A-M030	DNDG39A-M030	DNDG12A-M030	DNDG92A-M030	DNDG13A-M030	DNDG93A-M030	4M	DNDG21A-M040	DNDG31A-M040	DNDG29A-M040	DNDG39A-M040	DNDG12A-M040	DNDG92A-M040	DNDG13A-M040	DNDG93A-M040	5M	DNDG21A-M050	DNDG31A-M050	DNDG29A-M050	DNDG39A-M050	DNDG12A-M050	DNDG92A-M050	DNDG13A-M050	DNDG93A-M050																																																																																																																																																														
4M	DNDG21A-M040	DNDG31A-M040	DNDG29A-M040	DNDG39A-M040	DNDG12A-M040	DNDG92A-M040	DNDG13A-M040	DNDG93A-M040	5M	DNDG21A-M050	DNDG31A-M050	DNDG29A-M050	DNDG39A-M050	DNDG12A-M050	DNDG92A-M050	DNDG13A-M050	DNDG93A-M050																																																																																																																																																																																



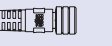

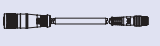

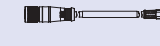
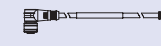
SINGLE-ENDED MICRO-CHANGE® (M12) CORDSETS					DOUBLE-ENDED MICRO-CHANGE® (M12) CORDSETS (FEMALE/MALE)																																																																																																																																																																																																																																																																		
																																																																																																																																																																																																																																																																							
MALE STRAIGHT		MALE 90°		FEMALE STRAIGHT		FEMALE 90°		STRAIGHT/STRAIGHT		90°/STRAIGHT		STRAIGHT/90°		90°/90°																																																																																																																																																																																																																																																									
<b>THIN STANDARD CABLE [1]</b>																																																																																																																																																																																																																																																																							
0.6M	DND02A-M006	DND03A-M006	DND20A-M006	DND30A-M006	DND22A-M006	DND32A-M006	DND23A-M006	DND33A-M006	1M	DND02A-M010	DND03A-M010	DND20A-M010	DND30A-M010	DND22A-M010	DND32A-M010	DND23A-M010	DND33A-M010	2M	DND02A-M020	DND03A-M020	DND20A-M020	DND30A-M020	DND22A-M020	DND32A-M020	DND23A-M020	DND33A-M020	3M	DND02A-M030	DND03A-M030	DND20A-M030	DND30A-M030	DND22A-M030	DND32A-M030	DND23A-M030	DND33A-M030	4M	DND02A-M040	DND03A-M040	DND20A-M040	DND30A-M040	DND22A-M040	DND32A-M040	DND23A-M040	DND33A-M040	5M	DND02A-M050	DND03A-M050	DND20A-M050	DND30A-M050	DND22A-M050	DND32A-M050	DND23A-M050	DND33A-M050	<b>THIN FLEX-RATED CABLE [1]</b>																0.6M	DNDF02A-M006	DNDF03A-M006	DNDF20A-M006	DNDF30A-M006	DNDF22A-M006	DNDF32A-M006	DNDF23A-M006	DNDF33A-M006	1M	DNDF02A-M010	DNDF03A-M010	DNDF20A-M010	DNDF30A-M010	DNDF22A-M010	DNDF32A-M010	DNDF23A-M010	DNDF33A-M010	2M	DNDF02A-M020	DNDF03A-M020	DNDF20A-M020	DNDF30A-M020	DNDF22A-M020	DNDF32A-M020	DNDF23A-M020	DNDF33A-M020	3M	DNDF02A-M030	DNDF03A-M030	DNDF20A-M030	DNDF30A-M030	DNDF22A-M030	DNDF32A-M030	DNDF23A-M030	DNDF33A-M030	4M	DNDF02A-M040	DNDF03A-M040	DNDF20A-M040	DNDF30A-M040	DNDF22A-M040	DNDF32A-M040	DNDF23A-M040	DNDF33A-M040	5M	DNDF02A-M050	DNDF03A-M050	DNDF20A-M050	DNDF30A-M050	DNDF22A-M050	DNDF32A-M050	DNDF23A-M050	DNDF33A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG02A-M006	DNDG03A-M006	DNDG20A-M006	DNDG30A-M006	DNDG22A-M006	DNDG32A-M006	DNDG23A-M006	DNDG33A-M006	1M	DNDG02A-M010	DNDG03A-M010	DNDG20A-M010	DNDG30A-M010	DNDG22A-M010	DNDG32A-M010	DNDG23A-M010	DNDG33A-M010	2M	DNDG02A-M020	DNDG03A-M020	DNDG20A-M020	DNDG30A-M020	DNDG22A-M020	DNDG32A-M020	DNDG23A-M020	DNDG33A-M020	3M	DNDG02A-M030	DNDG03A-M030	DNDG20A-M030	DNDG30A-M030	DNDG22A-M030	DNDG32A-M030	DNDG23A-M030	DNDG33A-M030	4M	DNDG02A-M040	DNDG03A-M040	DNDG20A-M040	DNDG30A-M040	DNDG22A-M040	DNDG32A-M040	DNDG23A-M040	DNDG33A-M040	5M	DNDG02A-M050	DNDG03A-M050	DNDG20A-M050	DNDG30A-M050	DNDG22A-M050	DNDG32A-M050	DNDG23A-M050	DNDG33A-M050	<b>ULTRA-THIN CABLE</b>																0.6M	805006D12M006	805007D12M006	805000D12M006	805001D12M006	885030D12M006	885031D12M006	885032D12M006	885033D12M006	1M	805006D12M010	805007D12M010	805000D12M010	805001D12M010	885030D12M010	885031D12M010	885032D12M010	885033D12M010	2M	805006D12M020	805007D12M020	805000D12M020	805001D12M020	885030D12M020	885031D12M020	885032D12M020	885033D12M020	3M	805006D12M030	805007D12M030	805000D12M030	805001D12M030	885030D12M030	885031D12M030	885032D12M030	885033D12M030	4M	805006D12M040	805007D12M040	805000D12M040	805001D12M040	885030D12M040	885031D12M040	885032D12M040	885033D12M040	5M	805006D12M050	805007D12M050	805000D12M050	805001D12M050	885030D12M050	885031D12M050	885032D12M050	885033D12M050
2M	DND02A-M020	DND03A-M020	DND20A-M020	DND30A-M020	DND22A-M020	DND32A-M020	DND23A-M020	DND33A-M020	3M	DND02A-M030	DND03A-M030	DND20A-M030	DND30A-M030	DND22A-M030	DND32A-M030	DND23A-M030	DND33A-M030	4M	DND02A-M040	DND03A-M040	DND20A-M040	DND30A-M040	DND22A-M040	DND32A-M040	DND23A-M040	DND33A-M040	5M	DND02A-M050	DND03A-M050	DND20A-M050	DND30A-M050	DND22A-M050	DND32A-M050	DND23A-M050	DND33A-M050	<b>THIN FLEX-RATED CABLE [1]</b>																0.6M	DNDF02A-M006	DNDF03A-M006	DNDF20A-M006	DNDF30A-M006	DNDF22A-M006	DNDF32A-M006	DNDF23A-M006	DNDF33A-M006	1M	DNDF02A-M010	DNDF03A-M010	DNDF20A-M010	DNDF30A-M010	DNDF22A-M010	DNDF32A-M010	DNDF23A-M010	DNDF33A-M010	2M	DNDF02A-M020	DNDF03A-M020	DNDF20A-M020	DNDF30A-M020	DNDF22A-M020	DNDF32A-M020	DNDF23A-M020	DNDF33A-M020	3M	DNDF02A-M030	DNDF03A-M030	DNDF20A-M030	DNDF30A-M030	DNDF22A-M030	DNDF32A-M030	DNDF23A-M030	DNDF33A-M030	4M	DNDF02A-M040	DNDF03A-M040	DNDF20A-M040	DNDF30A-M040	DNDF22A-M040	DNDF32A-M040	DNDF23A-M040	DNDF33A-M040	5M	DNDF02A-M050	DNDF03A-M050	DNDF20A-M050	DNDF30A-M050	DNDF22A-M050	DNDF32A-M050	DNDF23A-M050	DNDF33A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG02A-M006	DNDG03A-M006	DNDG20A-M006	DNDG30A-M006	DNDG22A-M006	DNDG32A-M006	DNDG23A-M006	DNDG33A-M006	1M	DNDG02A-M010	DNDG03A-M010	DNDG20A-M010	DNDG30A-M010	DNDG22A-M010	DNDG32A-M010	DNDG23A-M010	DNDG33A-M010	2M	DNDG02A-M020	DNDG03A-M020	DNDG20A-M020	DNDG30A-M020	DNDG22A-M020	DNDG32A-M020	DNDG23A-M020	DNDG33A-M020	3M	DNDG02A-M030	DNDG03A-M030	DNDG20A-M030	DNDG30A-M030	DNDG22A-M030	DNDG32A-M030	DNDG23A-M030	DNDG33A-M030	4M	DNDG02A-M040	DNDG03A-M040	DNDG20A-M040	DNDG30A-M040	DNDG22A-M040	DNDG32A-M040	DNDG23A-M040	DNDG33A-M040	5M	DNDG02A-M050	DNDG03A-M050	DNDG20A-M050	DNDG30A-M050	DNDG22A-M050	DNDG32A-M050	DNDG23A-M050	DNDG33A-M050	<b>ULTRA-THIN CABLE</b>																0.6M	805006D12M006	805007D12M006	805000D12M006	805001D12M006	885030D12M006	885031D12M006	885032D12M006	885033D12M006	1M	805006D12M010	805007D12M010	805000D12M010	805001D12M010	885030D12M010	885031D12M010	885032D12M010	885033D12M010	2M	805006D12M020	805007D12M020	805000D12M020	805001D12M020	885030D12M020	885031D12M020	885032D12M020	885033D12M020	3M	805006D12M030	805007D12M030	805000D12M030	805001D12M030	885030D12M030	885031D12M030	885032D12M030	885033D12M030	4M	805006D12M040	805007D12M040	805000D12M040	805001D12M040	885030D12M040	885031D12M040	885032D12M040	885033D12M040	5M	805006D12M050	805007D12M050	805000D12M050	805001D12M050	885030D12M050	885031D12M050	885032D12M050	885033D12M050																		
4M	DND02A-M040	DND03A-M040	DND20A-M040	DND30A-M040	DND22A-M040	DND32A-M040	DND23A-M040	DND33A-M040	5M	DND02A-M050	DND03A-M050	DND20A-M050	DND30A-M050	DND22A-M050	DND32A-M050	DND23A-M050	DND33A-M050	<b>THIN FLEX-RATED CABLE [1]</b>																0.6M	DNDF02A-M006	DNDF03A-M006	DNDF20A-M006	DNDF30A-M006	DNDF22A-M006	DNDF32A-M006	DNDF23A-M006	DNDF33A-M006	1M	DNDF02A-M010	DNDF03A-M010	DNDF20A-M010	DNDF30A-M010	DNDF22A-M010	DNDF32A-M010	DNDF23A-M010	DNDF33A-M010	2M	DNDF02A-M020	DNDF03A-M020	DNDF20A-M020	DNDF30A-M020	DNDF22A-M020	DNDF32A-M020	DNDF23A-M020	DNDF33A-M020	3M	DNDF02A-M030	DNDF03A-M030	DNDF20A-M030	DNDF30A-M030	DNDF22A-M030	DNDF32A-M030	DNDF23A-M030	DNDF33A-M030	4M	DNDF02A-M040	DNDF03A-M040	DNDF20A-M040	DNDF30A-M040	DNDF22A-M040	DNDF32A-M040	DNDF23A-M040	DNDF33A-M040	5M	DNDF02A-M050	DNDF03A-M050	DNDF20A-M050	DNDF30A-M050	DNDF22A-M050	DNDF32A-M050	DNDF23A-M050	DNDF33A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG02A-M006	DNDG03A-M006	DNDG20A-M006	DNDG30A-M006	DNDG22A-M006	DNDG32A-M006	DNDG23A-M006	DNDG33A-M006	1M	DNDG02A-M010	DNDG03A-M010	DNDG20A-M010	DNDG30A-M010	DNDG22A-M010	DNDG32A-M010	DNDG23A-M010	DNDG33A-M010	2M	DNDG02A-M020	DNDG03A-M020	DNDG20A-M020	DNDG30A-M020	DNDG22A-M020	DNDG32A-M020	DNDG23A-M020	DNDG33A-M020	3M	DNDG02A-M030	DNDG03A-M030	DNDG20A-M030	DNDG30A-M030	DNDG22A-M030	DNDG32A-M030	DNDG23A-M030	DNDG33A-M030	4M	DNDG02A-M040	DNDG03A-M040	DNDG20A-M040	DNDG30A-M040	DNDG22A-M040	DNDG32A-M040	DNDG23A-M040	DNDG33A-M040	5M	DNDG02A-M050	DNDG03A-M050	DNDG20A-M050	DNDG30A-M050	DNDG22A-M050	DNDG32A-M050	DNDG23A-M050	DNDG33A-M050	<b>ULTRA-THIN CABLE</b>																0.6M	805006D12M006	805007D12M006	805000D12M006	805001D12M006	885030D12M006	885031D12M006	885032D12M006	885033D12M006	1M	805006D12M010	805007D12M010	805000D12M010	805001D12M010	885030D12M010	885031D12M010	885032D12M010	885033D12M010	2M	805006D12M020	805007D12M020	805000D12M020	805001D12M020	885030D12M020	885031D12M020	885032D12M020	885033D12M020	3M	805006D12M030	805007D12M030	805000D12M030	805001D12M030	885030D12M030	885031D12M030	885032D12M030	885033D12M030	4M	805006D12M040	805007D12M040	805000D12M040	805001D12M040	885030D12M040	885031D12M040	885032D12M040	885033D12M040	5M	805006D12M050	805007D12M050	805000D12M050	805001D12M050	885030D12M050	885031D12M050	885032D12M050	885033D12M050																																				
<b>THIN FLEX-RATED CABLE [1]</b>																																																																																																																																																																																																																																																																							
0.6M	DNDF02A-M006	DNDF03A-M006	DNDF20A-M006	DNDF30A-M006	DNDF22A-M006	DNDF32A-M006	DNDF23A-M006	DNDF33A-M006	1M	DNDF02A-M010	DNDF03A-M010	DNDF20A-M010	DNDF30A-M010	DNDF22A-M010	DNDF32A-M010	DNDF23A-M010	DNDF33A-M010	2M	DNDF02A-M020	DNDF03A-M020	DNDF20A-M020	DNDF30A-M020	DNDF22A-M020	DNDF32A-M020	DNDF23A-M020	DNDF33A-M020	3M	DNDF02A-M030	DNDF03A-M030	DNDF20A-M030	DNDF30A-M030	DNDF22A-M030	DNDF32A-M030	DNDF23A-M030	DNDF33A-M030	4M	DNDF02A-M040	DNDF03A-M040	DNDF20A-M040	DNDF30A-M040	DNDF22A-M040	DNDF32A-M040	DNDF23A-M040	DNDF33A-M040	5M	DNDF02A-M050	DNDF03A-M050	DNDF20A-M050	DNDF30A-M050	DNDF22A-M050	DNDF32A-M050	DNDF23A-M050	DNDF33A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG02A-M006	DNDG03A-M006	DNDG20A-M006	DNDG30A-M006	DNDG22A-M006	DNDG32A-M006	DNDG23A-M006	DNDG33A-M006	1M	DNDG02A-M010	DNDG03A-M010	DNDG20A-M010	DNDG30A-M010	DNDG22A-M010	DNDG32A-M010	DNDG23A-M010	DNDG33A-M010	2M	DNDG02A-M020	DNDG03A-M020	DNDG20A-M020	DNDG30A-M020	DNDG22A-M020	DNDG32A-M020	DNDG23A-M020	DNDG33A-M020	3M	DNDG02A-M030	DNDG03A-M030	DNDG20A-M030	DNDG30A-M030	DNDG22A-M030	DNDG32A-M030	DNDG23A-M030	DNDG33A-M030	4M	DNDG02A-M040	DNDG03A-M040	DNDG20A-M040	DNDG30A-M040	DNDG22A-M040	DNDG32A-M040	DNDG23A-M040	DNDG33A-M040	5M	DNDG02A-M050	DNDG03A-M050	DNDG20A-M050	DNDG30A-M050	DNDG22A-M050	DNDG32A-M050	DNDG23A-M050	DNDG33A-M050	<b>ULTRA-THIN CABLE</b>																0.6M	805006D12M006	805007D12M006	805000D12M006	805001D12M006	885030D12M006	885031D12M006	885032D12M006	885033D12M006	1M	805006D12M010	805007D12M010	805000D12M010	805001D12M010	885030D12M010	885031D12M010	885032D12M010	885033D12M010	2M	805006D12M020	805007D12M020	805000D12M020	805001D12M020	885030D12M020	885031D12M020	885032D12M020	885033D12M020	3M	805006D12M030	805007D12M030	805000D12M030	805001D12M030	885030D12M030	885031D12M030	885032D12M030	885033D12M030	4M	805006D12M040	805007D12M040	805000D12M040	805001D12M040	885030D12M040	885031D12M040	885032D12M040	885033D12M040	5M	805006D12M050	805007D12M050	805000D12M050	805001D12M050	885030D12M050	885031D12M050	885032D12M050	885033D12M050																																																																						
2M	DNDF02A-M020	DNDF03A-M020	DNDF20A-M020	DNDF30A-M020	DNDF22A-M020	DNDF32A-M020	DNDF23A-M020	DNDF33A-M020	3M	DNDF02A-M030	DNDF03A-M030	DNDF20A-M030	DNDF30A-M030	DNDF22A-M030	DNDF32A-M030	DNDF23A-M030	DNDF33A-M030	4M	DNDF02A-M040	DNDF03A-M040	DNDF20A-M040	DNDF30A-M040	DNDF22A-M040	DNDF32A-M040	DNDF23A-M040	DNDF33A-M040	5M	DNDF02A-M050	DNDF03A-M050	DNDF20A-M050	DNDF30A-M050	DNDF22A-M050	DNDF32A-M050	DNDF23A-M050	DNDF33A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG02A-M006	DNDG03A-M006	DNDG20A-M006	DNDG30A-M006	DNDG22A-M006	DNDG32A-M006	DNDG23A-M006	DNDG33A-M006	1M	DNDG02A-M010	DNDG03A-M010	DNDG20A-M010	DNDG30A-M010	DNDG22A-M010	DNDG32A-M010	DNDG23A-M010	DNDG33A-M010	2M	DNDG02A-M020	DNDG03A-M020	DNDG20A-M020	DNDG30A-M020	DNDG22A-M020	DNDG32A-M020	DNDG23A-M020	DNDG33A-M020	3M	DNDG02A-M030	DNDG03A-M030	DNDG20A-M030	DNDG30A-M030	DNDG22A-M030	DNDG32A-M030	DNDG23A-M030	DNDG33A-M030	4M	DNDG02A-M040	DNDG03A-M040	DNDG20A-M040	DNDG30A-M040	DNDG22A-M040	DNDG32A-M040	DNDG23A-M040	DNDG33A-M040	5M	DNDG02A-M050	DNDG03A-M050	DNDG20A-M050	DNDG30A-M050	DNDG22A-M050	DNDG32A-M050	DNDG23A-M050	DNDG33A-M050	<b>ULTRA-THIN CABLE</b>																0.6M	805006D12M006	805007D12M006	805000D12M006	805001D12M006	885030D12M006	885031D12M006	885032D12M006	885033D12M006	1M	805006D12M010	805007D12M010	805000D12M010	805001D12M010	885030D12M010	885031D12M010	885032D12M010	885033D12M010	2M	805006D12M020	805007D12M020	805000D12M020	805001D12M020	885030D12M020	885031D12M020	885032D12M020	885033D12M020	3M	805006D12M030	805007D12M030	805000D12M030	805001D12M030	885030D12M030	885031D12M030	885032D12M030	885033D12M030	4M	805006D12M040	805007D12M040	805000D12M040	805001D12M040	885030D12M040	885031D12M040	885032D12M040	885033D12M040	5M	805006D12M050	805007D12M050	805000D12M050	805001D12M050	885030D12M050	885031D12M050	885032D12M050	885033D12M050																																																																																								
4M	DNDF02A-M040	DNDF03A-M040	DNDF20A-M040	DNDF30A-M040	DNDF22A-M040	DNDF32A-M040	DNDF23A-M040	DNDF33A-M040	5M	DNDF02A-M050	DNDF03A-M050	DNDF20A-M050	DNDF30A-M050	DNDF22A-M050	DNDF32A-M050	DNDF23A-M050	DNDF33A-M050	<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																0.6M	DNDG02A-M006	DNDG03A-M006	DNDG20A-M006	DNDG30A-M006	DNDG22A-M006	DNDG32A-M006	DNDG23A-M006	DNDG33A-M006	1M	DNDG02A-M010	DNDG03A-M010	DNDG20A-M010	DNDG30A-M010	DNDG22A-M010	DNDG32A-M010	DNDG23A-M010	DNDG33A-M010	2M	DNDG02A-M020	DNDG03A-M020	DNDG20A-M020	DNDG30A-M020	DNDG22A-M020	DNDG32A-M020	DNDG23A-M020	DNDG33A-M020	3M	DNDG02A-M030	DNDG03A-M030	DNDG20A-M030	DNDG30A-M030	DNDG22A-M030	DNDG32A-M030	DNDG23A-M030	DNDG33A-M030	4M	DNDG02A-M040	DNDG03A-M040	DNDG20A-M040	DNDG30A-M040	DNDG22A-M040	DNDG32A-M040	DNDG23A-M040	DNDG33A-M040	5M	DNDG02A-M050	DNDG03A-M050	DNDG20A-M050	DNDG30A-M050	DNDG22A-M050	DNDG32A-M050	DNDG23A-M050	DNDG33A-M050	<b>ULTRA-THIN CABLE</b>																0.6M	805006D12M006	805007D12M006	805000D12M006	805001D12M006	885030D12M006	885031D12M006	885032D12M006	885033D12M006	1M	805006D12M010	805007D12M010	805000D12M010	805001D12M010	885030D12M010	885031D12M010	885032D12M010	885033D12M010	2M	805006D12M020	805007D12M020	805000D12M020	805001D12M020	885030D12M020	885031D12M020	885032D12M020	885033D12M020	3M	805006D12M030	805007D12M030	805000D12M030	805001D12M030	885030D12M030	885031D12M030	885032D12M030	885033D12M030	4M	805006D12M040	805007D12M040	805000D12M040	805001D12M040	885030D12M040	885031D12M040	885032D12M040	885033D12M040	5M	805006D12M050	805007D12M050	805000D12M050	805001D12M050	885030D12M050	885031D12M050	885032D12M050	885033D12M050																																																																																																										
<b>THIN CLASS 2/TRAY RATED CABLE [1]</b>																																																																																																																																																																																																																																																																							
0.6M	DNDG02A-M006	DNDG03A-M006	DNDG20A-M006	DNDG30A-M006	DNDG22A-M006	DNDG32A-M006	DNDG23A-M006	DNDG33A-M006	1M	DNDG02A-M010	DNDG03A-M010	DNDG20A-M010	DNDG30A-M010	DNDG22A-M010	DNDG32A-M010	DNDG23A-M010	DNDG33A-M010	2M	DNDG02A-M020	DNDG03A-M020	DNDG20A-M020	DNDG30A-M020	DNDG22A-M020	DNDG32A-M020	DNDG23A-M020	DNDG33A-M020	3M	DNDG02A-M030	DNDG03A-M030	DNDG20A-M030	DNDG30A-M030	DNDG22A-M030	DNDG32A-M030	DNDG23A-M030	DNDG33A-M030	4M	DNDG02A-M040	DNDG03A-M040	DNDG20A-M040	DNDG30A-M040	DNDG22A-M040	DNDG32A-M040	DNDG23A-M040	DNDG33A-M040	5M	DNDG02A-M050	DNDG03A-M050	DNDG20A-M050	DNDG30A-M050	DNDG22A-M050	DNDG32A-M050	DNDG23A-M050	DNDG33A-M050	<b>ULTRA-THIN CABLE</b>																0.6M	805006D12M006	805007D12M006	805000D12M006	805001D12M006	885030D12M006	885031D12M006	885032D12M006	885033D12M006	1M	805006D12M010	805007D12M010	805000D12M010	805001D12M010	885030D12M010	885031D12M010	885032D12M010	885033D12M010	2M	805006D12M020	805007D12M020	805000D12M020	805001D12M020	885030D12M020	885031D12M020	885032D12M020	885033D12M020	3M	805006D12M030	805007D12M030	805000D12M030	805001D12M030	885030D12M030	885031D12M030	885032D12M030	885033D12M030	4M	805006D12M040	805007D12M040	805000D12M040	805001D12M040	885030D12M040	885031D12M040	885032D12M040	885033D12M040	5M	805006D12M050	805007D12M050	805000D12M050	805001D12M050	885030D12M050	885031D12M050	885032D12M050	885033D12M050																																																																																																																																												
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<b>ULTRA-THIN CABLE</b>																																																																																																																																																																																																																																																																							
0.6M	805006D12M006	805007D12M006	805000D12M006	805001D12M006	885030D12M006	885031D12M006	885032D12M006	885033D12M006	1M	805006D12M010	805007D12M010	805000D12M010	805001D12M010	885030D12M010	885031D12M010	885032D12M010	885033D12M010	2M	805006D12M020	805007D12M020	805000D12M020	805001D12M020	885030D12M020	885031D12M020	885032D12M020	885033D12M020	3M	805006D12M030	805007D12M030	805000D12M030	805001D12M030	885030D12M030	885031D12M030	885032D12M030	885033D12M030	4M	805006D12M040	805007D12M040	805000D12M040	805001D12M040	885030D12M040	885031D12M040	885032D12M040	885033D12M040	5M	805006D12M050	805007D12M050	805000D12M050	805001D12M050	885030D12M050	885031D12M050	885032D12M050	885033D12M050																																																																																																																																																																																																																		
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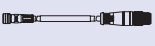
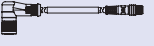
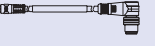
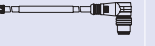
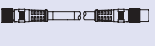
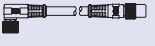

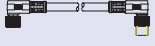
[1] The standard coupling nut is black epoxy-coated zinc. For stainless steel, replace "A" with "SS". For nickel-brass, replace "A" with "NB"

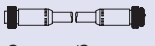
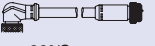
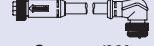
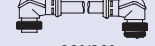
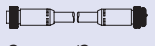
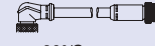
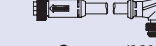



CONNECTORS, CORDSETS AND DISTRIBUTION BOXES FOR SENSOR, ACTUATOR AND BUS NETWORK APPLICATIONS

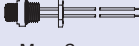
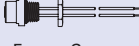




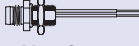
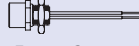




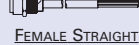
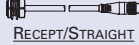
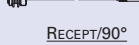
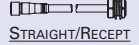
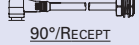
## DROP CORDSETS - Order Number

SINGLE-ENDED NANO-CHANGE® (M8) CORDSETS				DOUBLE-ENDED MICRO-CHANGE® (M12) TO NANO-CHANGE® (M8) CORDSETS (FEMALE/MALE)			
							
MALE STRAIGHT	MALE 90°	FEMALE STRAIGHT	FEMALE 90°	STRAIGHT/STRAIGHT	90°/STRAIGHT	STRAIGHT/90°	90°/90°
ULTRA-THIN CABLE							
0.3M 405006D12M003	405007D12M003	405000D12M003	405001D12M003	845030D12M003	845031D12M003	845032D12M003	845033D12M003
0.6M 405006D12M006	405007D12M006	405000D12M006	405001D12M006	845030D12M006	845031D12M006	845032D12M006	845033D12M006
1M 405006D12M010	405007D12M010	405000D12M010	405001D12M010	845030D12M010	845031D12M010	845032D12M010	845033D12M010
2M 405006D12M020	405007D12M020	405000D12M020	405001D12M020	845030D12M020	845031D12M020	845032D12M020	845033D12M020
3M 405006D12M030	405007D12M030	405000D12M030	405001D12M030	845030D12M030	845031D12M030	845032D12M030	845033D12M030
4M 405006D12M040	405007D12M040	405000D12M040	405001D12M040	845030D12M040	845031D12M040	845032D12M040	845033D12M040
5M 405006D12M050	405007D12M050	405000D12M050	405001D12M050	845030D12M050	845031D12M050	845032D12M050	845033D12M050

DOUBLE-ENDED NANO-CHANGE® (M8) TO MICRO-CHANGE® (M12) CORDSETS (FEMALE/MALE)				DOUBLE-ENDED NANO-CHANGE® (M8) TO NANO-CHANGE® (M8) CORDSETS (FEMALE/MALE)			
							
STRAIGHT/STRAIGHT	90°/STRAIGHT	STRAIGHT/90°	90°/90°	STRAIGHT/STRAIGHT	90°/STRAIGHT	STRAIGHT/90°	90°/90°
ULTRA-THIN CABLE							
0.3M 485030D12M003	485031D12M003	485032D12M003	485033D12M003	445030D12M003	445031D12M003	445032D12M003	445033D12M003
0.6M 485030D12M006	485031D12M006	485032D12M006	485033D12M006	445030D12M006	445031D12M006	445032D12M006	445033D12M006
1M 485030D12M010	485031D12M010	485032D12M010	485033D12M010	445030D12M010	445031D12M010	445032D12M010	445033D12M010
2M 485030D12M020	485031D12M020	485032D12M020	485033D12M020	445030D12M020	445031D12M020	445032D12M020	445033D12M020
3M 485030D12M030	485031D12M030	485032D12M030	485033D12M030	445030D12M030	445031D12M030	445032D12M030	445033D12M030
4M 485030D12M040	485031D12M040	485032D12M040	485033D12M040	445030D12M040	445031D12M040	445032D12M040	445033D12M040
5M 485030D12M050	485031D12M050	485032D12M050	485033D12M050	445030D12M050	445031D12M050	445032D12M050	445033D12M050

DOUBLE-ENDED MINI-CHANGE® CORDSETS (FEMALE/MALE)							
							
STRAIGHT/STRAIGHT	90°/STRAIGHT	STRAIGHT/90°	90°/90°	STRAIGHT/STRAIGHT	90°/STRAIGHT	STRAIGHT/90°	90°/90°
THIN STANDARD CABLE [1]				THIN FLEX-RATED CABLE [1]			
0.6M DND11A-M006	DND91A-M006	DND19A-M006	DND99A-M006	DNDF11A-M006	DNDF91A-M006	DNDF19A-M006	DNDF99A-M006
1M DND11A-M010	DND91A-M010	DND19A-M010	DND99A-M010	DNDF11A-M010	DNDF91A-M010	DNDF19A-M010	DNDF99A-M010
2M DND11A-M020	DND91A-M020	DND19A-M020	DND99A-M020	DNDF11A-M020	DNDF91A-M020	DNDF19A-M020	DNDF99A-M020
3M DND11A-M030	DND91A-M030	DND19A-M030	DND99A-M030	DNDF11A-M030	DNDF91A-M030	DNDF19A-M030	DNDF99A-M030
4M DND11A-M040	DND91A-M040	DND19A-M040	DND99A-M040	DNDF11A-M040	DNDF91A-M040	DNDF19A-M040	DNDF99A-M040
5M DND11A-M050	DND91A-M050	DND19A-M050	DND99A-M050	DNDF11A-M050	DNDF91A-M050	DNDF19A-M050	DNDF99A-M050
THIN CLASS 2/TRAY RATED CABLE [1]							
0.6M DNDG11A-M006	DNDG91A-M006	DNDG19A-M006	DNDG99A-M006				
1M DNDG11A-M010	DNDG91A-M010	DNDG19A-M010	DNDG99A-M010				
2M DNDG11A-M020	DNDG91A-M020	DNDG19A-M020	DNDG99A-M020				
3M DNDG11A-M030	DNDG91A-M030	DNDG19A-M030	DNDG99A-M030				
4M DNDG11A-M040	DNDG91A-M040	DNDG19A-M040	DNDG99A-M040				
5M DNDG11A-M050	DNDG91A-M050	DNDG19A-M050	DNDG99A-M050				

## DROP RECEPTACLES - Order Number

MICRO-CHANGE® (M12) RECEPTACLES - 12" WIRE PIGTAIL		MICRO-CHANGE® (M12) RECEPTACLES - PCB MOUNT			
					
MALE STRAIGHT	FEMALE STRAIGHT	MALE STRAIGHT	MALE 90°	FEMALE STRAIGHT	FEMALE 90°
81612	81611	8R5L560005-35	8R5L570005-35	8R5L500005-35	8R5L510005-35
NANO-CHANGE® (M8) RECEPTACLES - 12" WIRE PIGTAIL		NANO-CHANGE® (M8) RECEPTACLES - PCB MOUNT		MICRO-CHANGE® (M12) RECEPTACLES - BULKHEAD FEED-THRU	
					
MALE STRAIGHT	FEMALE STRAIGHT	MALE STRAIGHT	MALE 90°	MALE STRAIGHT/FEMALE STRAIGHT	
4R5P06D12C305	4R5P00D12C305	4R5F560005-35	4R5F570005-35	8R5L30	
FRONT PANEL MOUNT W/CABLE 1/2" - 14NPT		DOUBLE-ENDED BACK PANEL MOUNT TO MICRO-CHANGE® (M12) RECEPTACLES (FEMALE/MALE)			
					
MALE STRAIGHT	FEMALE STRAIGHT	RECEPT/STRAIGHT	RECEPT/90°	STRAIGHT/RECEPT	90°/RECEPT
THIN MEDIA CABLE [1]		THIN STANDARD CABLE [1]			
0.5M DND5100-M005	DND5000-M005	0.5M DNDC220A-M005	DNDC230A-M005	DNDC302A-M005	DNDC303A-M005
1M DND5100-M010	DND5000-M010	1M DNDC220A-M010	DNDC230A-M010	DNDC302A-M010	DNDC303A-M010
2M DND5100-M020	DND5000-M020	2M DNDC220A-M020	DNDC230A-M020	DNDC302A-M020	DNDC303A-M020
5M DND5100-M050	DND5000-M050	5M DNDC220A-M050	DNDC230A-M050	DNDC302A-M050	DNDC303A-M050

[1] The standard coupling nut is black epoxy-coated zinc. For stainless steel, replace "A" with "SS". For nickel-brass, replace "A" with "NB"



## CONNECTORS, CORDSETS AND DISTRIBUTION BOXES FOR SENSOR, ACTUATOR AND BUS NETWORK APPLICATIONS

### DISTRIBUTION BOXES - Order Number

SIDE-MOUNT				TOP-MOUNT			
<b>MINI-CHANGE® BUS IN W/MINI PORTS</b>	<b>MINI-CHANGE® BUS IN W/MICRO PORTS</b>	<b>MINI-CHANGE® BUS IN/BUS OUT W/MINI PORTS</b>	<b>MINI-CHANGE® BUS IN/BUS OUT W/MICRO PORTS</b>	<b>MINI-CHANGE® BUS IN W/MICRO PORTS</b>	<b>MICRO-CHANGE® BUS IN W/2 METER CABLE W/MICRO PORTS</b>	<b>MINI-CHANGE® BUS IN W/2 METER CABLE W/MICRO PORTS</b>	<b>MINI-CHANGE® BUS IN/BUS OUT W/NANO PORTS</b>
2 Ports	-	-	DN2100	-	-	-	-
4 Ports	DN4000	DND4000	DN4100	DND4100	DND4200	DND4500-02	DND4300-02
6 Ports	DN6000	DND6000	DN6100	DND6100	-	-	-
8 Ports	DN8000	DND8000	-	-	DND8200	DND8500-02	DND8300-02
14 Ports	-	-	-	-	-	-	DNTA14114A1

### TEES AND SPLITTERS - Order Number

TRUNK (FEMALE-MALE) / DROP (FEMALE)							
MINI-CHANGE® TO MINI-CHANGE® CONNECTION				MINI-CHANGE® TO MICRO-CHANGE® CONNECTION		MICRO-CHANGE® TO MICRO-CHANGE® CONNECTION	
<b>STANDARD BUS DROP TEE</b>	<b>STANDARD BUS DROP TEE W/DROP CAP</b>	<b>STANDARD BUS DROP TEE W/POWER DIAGNOSTICS</b>	<b>BUS DROP WYE</b>	<b>BUS DROP MICRO TEE</b>	<b>MICRO-BUS DROP TEE</b>	<b>M-F/F SPLITTER</b>	
Right [2]	DN3020	DN3020-PM-3	DN3200	DND3021	MICT555	DNYG001	
Front [2]	DN3021	-	-	-	-	-	
Back [2]	DN3022	-	-	DND3020	-	-	
Left [2]	DN3023	DN3020-PM-1	-	-	-	-	

### OTHER CONNECTIVITY - Order Number

FIELD-ATTACHABLE CONNECTORS				GENDER CHANGERS (INLINE ADAPTERS) [1]			
TRUNK (MINI-CHANGE® CONNECTION)		DROP (MICRO-CHANGE® (M12) CONNECTION)		TRUNK (MINI-CHANGE® CONNECTION)			
<b>FEMALE STRAIGHT</b>	<b>MALE STRAIGHT</b>	<b>FEMALE STRAIGHT</b>	<b>MALE STRAIGHT</b>	<b>STRAIGHT MALE/MALE</b>	<b>STRAIGHT FEMALE/FEMALE</b>	<b>STRAIGHT FEMALE/MALE W/POWER DIAGNOSTICS</b>	<b>FEMALE/MALE 90°</b>
1A5000-34DN	1A5006-34DN	8A5000-32DN	8A5006-32DN	115060A [1]	115010A [1]	115011A-PM-1 [1] [3] 115011A-PM-3 [1] [3]	115032A [1]
				-	-		-
TERMINATION RESISTORS / JUMPERS				INLINE SURGE SUPPRESSOR	BUS EXTENDER		
TRUNK (MINI-CHANGE® CONNECTION)		DROP (MICRO-CHANGE® (M12) CONNECTION)					
				<b>DN-SPNET</b>	<b>DNEXT-C</b>		
<b>MALE</b>	<b>FEMALE</b>	<b>MALE</b>	<b>FEMALE</b>				
Standard DN100	DN150	DND100	DND150				
w/LED DN100L	DN150L	-	-				
Jumpered [4]	-	DND101	DND151				

### OPEN STYLE - Order Number

A variety of Open-Style cordsets are available. Ask us!

	Open Style Single-Ended Cordsets	Thick Standard cable
	Open Style-to-Mini-Change® Cordsets	Mid cable
	Open Style-to-Micro-Change® (M12) Cordsets	Thin Standard cable
	Open Style-Back-Panel-Mount Receptacles	

[1] The standard coupling nut is black epoxy-coated zinc. For stainless steel, replace "A" with "SS". For nickel-brass, replace "A" with "NB"

[2] Orientation of a 90° drop cable with the female trunk connector on the left. DN3020-PM-1 must be mounted male left, female right and DN3020-PM-3 must be mounted female left, male right in order to see the display

[3] Orientation: 115060A-PM-1 must be mounted male left, female right, and 115060A-PM-3 must be mounted female left, male right in order to see the display

[4] Jumpered terminators are used during network installation for continuity verification



CONNECTORS, CORDSETS AND DISTRIBUTION BOXES FOR SENSOR, ACTUATOR AND BUS NETWORK APPLICATIONS

## POWER CONNECTIVITY

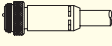

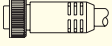

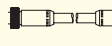
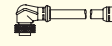


Auxiliary Power  
4-Pole Media



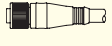

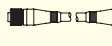
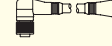




- Supplies auxiliary power to a variety of devices, including active I/O modules or machine stop tees
- Complete system of Mini-Change® cordsets (single and double-ended), tees and receptacles
- Standard and application-specific lengths

- Characteristics**
- Rugged IP68 rated connectors bring power to active I/O modules reliably
  - Variety of connector configuration and cable length options available

## POWER CORDSETS - Order Number

SINGLE-ENDED MINI-CHANGE® CORDSETS				DOUBLE-ENDED MINI-CHANGE® CORDSETS (FEMALE/MALE)			
							
MALE STRAIGHT	MALE 90°	FEMALE STRAIGHT	FEMALE 90°	STRAIGHT/STRAIGHT	90°/STRAIGHT	STRAIGHT/90°	90°/90°
<b>UL STOOW PVC CABLE, NEC COLOR CODE, SAE J-1738A PINOUT [1]</b>							
0.5M	-	-	-	114030A01M005	114031A01M005	114032A01M005	114033A01M005
1M	-	-	-	114030A01M010	114031A01M010	114032A01M010	114033A01M010
2M	104006A01M020	104007A01M020	104000A01M020	114030A01M020	114031A01M020	114032A01M020	114033A01M020
3M	-	-	-	114030A01M030	114031A01M030	114032A01M030	114033A01M030
4M	104006A01M040	104007A01M040	104000A01M040	114030A01M040	114031A01M040	114032A01M040	114033A01M040
5M	104006A01M050	104007A01M050	104000A01M050	114030A01M050	114031A01M050	114032A01M050	114033A01M050
10M	104006A01M100	104007A01M100	104000A01M100	114030A01M100	114031A01M100	114032A01M100	114033A01M100
<b>UL STOOW PVC CABLE, IEC COLOR CODE, CENELEC EN50004 PINOUT [1]</b>							
0.5M	-	-	-	114030A38M005	114031A38M005	114032A38M005	114033A38M005
1M	-	-	-	114030A38M010	114031A38M010	114032A38M010	114033A38M010
2M	104006A38M020	104007A38M020	104000A38M020	114030A38M020	114031A38M020	114032A38M020	114033A38M020
3M	-	-	-	114030A38M030	114031A38M030	114032A38M030	114033A38M030
4M	104006A38M040	104007A38M040	104000A38M040	114030A38M040	114031A38M040	114032A38M040	114033A38M040
5M	104006A38M050	104007A38M050	104000A38M050	114030A38M050	114031A38M050	114032A38M050	114033A38M050
10M	104006A38M100	104007A38M100	104000A38M100	114030A38M100	114031A38M100	114032A38M100	114033A38M100
<b>UL TC HIGH FLEX TPR CABLE, IEC COLOR CODE, CENELEC EN50004 PINOUT [1]</b>							
0.5M	-	-	-	114030K12M005	114031K12M005	114032K12M005	114033K12M005
1M	-	-	-	114030K12M010	114031K12M010	114032K12M010	114033K12M010
2M	104006K12M020	104007K12M020	104000K12M020	114030K12M020	114031K12M020	114032K12M020	114033K12M020
3M	-	-	-	114030K12M030	114031K12M030	114032K12M030	114033K12M030
4M	104006K12M040	104007K12M040	104000K12M040	114030K12M040	114031K12M040	114032K12M040	114033K12M040
5M	104006K12M050	104007K12M050	104000K12M050	114030K12M050	114031K12M050	114032K12M050	114033K12M050
10M	104006K12M100	104007K12M100	104000K12M100	114030K12M100	114031K12M100	114032K12M100	114033K12M100

SINGLE-ENDED MICRO-CHANGE® M12 CORDSETS				DOUBLE-ENDED MICRO-CHANGE® M12 CORDSETS (FEMALE/MALE)			
							
MALE STRAIGHT	MALE 90°	FEMALE STRAIGHT	FEMALE 90°	STRAIGHT/STRAIGHT	90°/STRAIGHT	STRAIGHT/90°	90°/90°
<b>PVC CABLE, IEC COLOR CODE FOR COMPACT I/O MODULES [2]</b>							
0.6M	-	-	-	884030E03M006	884031E03M006	884032E03M006	884033E03M006
1M	-	-	-	884030E03M010	884031E03M010	884032E03M010	884033E03M010
2M	804006E03M020	804007E03M020	804000E03M020	884030E03M020	884031E03M020	884032E03M020	884033E03M020
3M	-	-	-	884030E03M030	884031E03M030	884032E03M030	884033E03M030
4M	804006E03M040	804007E03M040	804000E03M040	884030E03M040	884031E03M040	884032E03M040	884033E03M040
5M	804006E03M050	804007E03M050	804000E03M050	884030E03M050	884031E03M050	884032E03M050	884033E03M050
10M	804006E03M100	804007E03M100	804000E03M100	884030E03M100	884031E03M100	884032E03M100	884033E03M100
<b>UL ITC/PLTC HIGH FLEX TPE CABLE, IEC COLOR CODE FOR COMPACT I/O MODULES [3]</b>							
0.6M	-	-	-	884030K05M006	884031K05M006	884032K05M006	884033K05M006
1M	-	-	-	884030K05M010	884031K05M010	884032K05M010	884033K05M010
2M	804006K05M020	804007K05M020	804000K05M020	884030K05M020	884031K05M020	884032K05M020	884033K05M020
3M	-	-	-	884030K05M030	884031K05M030	884032K05M030	884033K05M030
4M	804006K05M040	804007K05M040	804000K05M040	884030K05M040	884031K05M040	884032K05M040	884033K05M040
5M	804006K05M050	804007K05M050	804000K05M050	884030K05M050	884031K05M050	884032K05M050	884033K05M050
10M	804006K05M100	804007K05M100	804000K05M100	884030K05M100	884031K05M100	884032K05M100	884033K05M100

[1] The standard coupling nut is black epoxy-coated zinc. For stainless steel, add "1" on the end. For nickel-brass, add "3"

[2] The standard coupling nut is nickel-plated brass. For 316 Hex stainless steel, add an "8" at the end

[3] The standard coupling nut is nickel-plated brass with Teflon coating. For 316 Hex stainless steel, add an "8" at the end

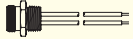




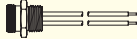
CONNECTORS, CORDSETS AND DISTRIBUTION BOXES FOR SENSOR, ACTUATOR AND BUS NETWORK APPLICATIONS

## POWER RECEPTACLES - Order Number

### FRONT PANEL - MOUNT RECEPTACLES



FEMALE W/LEADS



MALE W/LEADS



BULKHEAD FEED-THRU

### MINI-CHANGE® RECEPTACLES

1R4030

1F	1R4000A20A120	1R4006A20A120
3F	1R4000A20F030	1R4006A20F030
6F	1R4000A20F060	1R4006A20F060



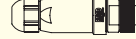
### MICRO-CHANGE® M12 RECEPTACLES (FOR COMPACT I/O)

8R4L30

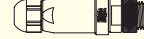
1F	8R4A00A18A120
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## POWER CONNECTORS - Order Number

### FIELD-ATTACHABLE CONNECTORS



FEMAL STRAIGHT

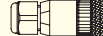


MALE STRAIGHT

### MINI-CHANGE® FIELD-ATTACHABLE CONNECTORS

1A4000-34

1A4006-34



8A4000-32



8A4006-32

### MICRO-CHANGE® M12 FIELD-ATTACHABLE CONNECTORS (FOR COMPACT I/O)

## POWER TEES AND TAPS - Order Number

### EMERGENCY STOP & AUXILIARY POWER MINI-CHANGE® TEES



STANDARD TEE  
PARALLEL WIRING

Front [1]

Back [1]



STANDARD TEE  
PARALLEL WIRING  
WITH POWER DIAGNOSTIC

DNETAUXPT-PM-1

DNETAUXPT-PM-3



SEGMENTING TEE  
TO ADD 24VDC POWER

DNAPT

-



MACHINE-STOP TEE

-

DNESJ-001 (2 ckt)

### POWER TAP MINI-CHANGE® CONNECTIONS (BUS IN/BUS OUT)



SEGMENTED POWER-  
INFUSION TEE

Right [1]

Back [1]

DN3030-PT-1

DN3030-PT



FEMALE/MALE

DN-PT1

-

-



FEMALE/FEMALE

DN-PT2

-

-



MALE/FEMALE

DN-PT3

-

-

## OTHER POWER CONNECTIVITY - Order Number

### INLINE ADAPTER



INLINE ADAPTER WITH POWER DIAGNOSTICS

114011A-PM-3

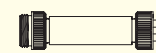
### JUMPER



MACHINE-STOP JUMPER PLUG

DNESJ

### SURGE SUPPRESSOR



SURGE SUPPRESSOR -  
AUX POWER

DN-SPAUX

[1] Orientation of a 90° drop cable with the female trunk connector on the left. Both DNETAUXPT-PM-1 and DNETAUXPT-PM-3 must be mounted female left, male right in order to see the display



## NETWORK I/O FOR ON-MACHINE AND IN-CABINET APPLICATIONS

### IP67 I/O MODULES

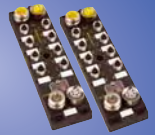
Compact, 8 Ports,  
M8 Connection



Compact, 4 Ports,  
M12 Connection



Classic, 8 Ports, M12  
Connection



- IP67 digital IO modules - Reliable world-class product for harsh environment
- Supports ADR and Quick-Connect
- Standard mounting hole pattern allows for interchangeably with popular I/O modules
- Visible diagnostic through status LEDs for network, module, external power, inputs & outputs

**Characteristics**

- 30 mm wide package size
- 8 ports, M8
- Speed: 125, 250, 500 Kbps
- Group 2 Server Slave
- I/O data: polled, cyclic and COS

**Order Number**

**TBDDN-880P-804** 8 input  
**TBDDN-880N-804** 8 input

**Characteristics**

- 30 mm wide package size
- 4 ports, M12 Ultra-Lock™ technology
- Speed: 125, 250, 500 Kbps
- Group 2 Server Slave
- I/O data: polled, cyclic and COS

**Order Number**

**TBDDN-480P-80U** 8 input  
**TBDDN-480N-80U** 8 input  
**TBDDN-444P-88U** 4 input, 4 output  
**TBDDN-444N-88U** 4 input, 4 output

**Characteristics**

- 60 mm wide package size
- 8 ports, M12 Ultra-Lock™ technology
- Speed: 125, 250, 500 Kbps
- Group 2 Server Slave
- I/O data: polled, cyclic and COS

**Order Number**

**TCDDN-8D0P-10U** 16 input  
**TCDDN-8D0N-10U** 16 input  
**TCDDN-888P-11U** 8 input, 8 output  
**TCDDN-888N-11U** 8 input, 8 output

N for NPN input and P for PNP input

All BradControl™ IP67 modules with Micro-Change® (M12) ports accept both threaded cordsets and the new BradConnectivity™ Ultra-Lock™ Connection System, the fastest, easiest, and most secure connection ever. Ultra-Lock™ technology is designed for higher performance and reliability to eliminate downtime, increase productivity, and lower costs.

For more information visit: [woodhead.com/ultralock](http://woodhead.com/ultralock)



# BradCommunications™

## NETWORK INTERFACE CARDS, PLC BACKPLANES, SWITCHES, GATEWAYS, SIMULATION SOFTWARE AND DIAGNOSTIC TOOLS

### SLAVE ADAPTERS

DeviceNet Slave  
Adapter for  
SIEMENS ET200S



- Allows easy connectivity between SIEMENS ET200S expansion modules and DeviceNet. Built with licensed technology from SIEMENS you are able to connect SIEMENS I/O to DeviceNet as a slave device.

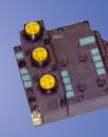
**Characteristics**

- Group 2 only server (non UCMM)
- Supports poll, strobe, cyclic, and change-of-state I/O connections
- Supports all SIEMENS ET200S expansion modules

**Order Number**

**5136-DNS-200S** DeviceNet slave adapter for SIEMENS ET200S

DeviceNet slave  
Adapter for  
SIEMENS ET200X



- Allows easy connectivity between SIEMENS ET200X expansion modules and DeviceNet. Built with licensed technology from SIEMENS you are able to connect SIEMENS I/O to DeviceNet as a slave device.

**Characteristics**

- Group 2 only server (non UCMM)
- Supports poll, strobe, cyclic, and change-of-state I/O connections
- Supports all SIEMENS ET200X expansion modules

**Order Number**

**5136-DNS-200X-8DI** DeviceNet slave adapter for SIEMENS ET200X (8 digital inputs)  
**5136-DNS-200X-4DO** DeviceNet slave adapter for SIEMENS ET200X (4 digital outputs)

### DIAGNOSTIC TOOLS

NetMeter for  
DeviceNet



- Certifying new DeviceNet installations
- Speed maintenance and repair times
- Preventing downtime by predicting faults caused by marginal operating characteristics
- Two modes of operation: Auto search and Expert

**Order Number**

**DN-MTR** NetMeter  
**DN-MTR-BAG** NetMeter carrying case  
**DN-MTR-CAL** NetMeter Calibration Testing  
**715-0016** NetMeter User's Guide  
**N2K-MTR** NetMeter for Marine applications utilizing NMEA 2000 (National Marine Electronics Association)  
**DN-MTR-KIT** NetMeter and accessories



NETWORK INTERFACE CARDS, PLC BACKPLANES, SWITCHES, GATEWAYS, SIMULATION SOFTWARE AND DIAGNOSTIC TOOLS

## NETWORK INTERFACE CARDS

### CompactPCI 3U Interface Card



- Fast scan times and high performance
- Available in 2, 4, 8 ports version

#### Characteristics

- Speed: 125, 250, 500 Kbps
- Protocols:
  - DeviceNet Master & Slave
- Software components:
  - OPC Server + DLL Library
- OS Supported:
  - Windows XP, 2000, NT4.
- Network diagnostic and configuration software

#### Order Number

**5136-DNP-CPCI** CompactPCI 3U bus

### Laptop Interface Card



- Fast scan times and high performance

#### Characteristics

- Speed: 125, 250, 500 Kbps
- Protocol:
  - DeviceNet Master & Slave
- Software components:
  - OPC Server + DLL Library
- OS Supported:
  - Windows XP, 2000, NT4
- Network diagnostic and configuration software

#### Order Number

**5136-DNP-PCM-ST** PCMCIA bus, 5 pin connector  
**5136-DNP-PCM-SM** PCMCIA bus, sealed micro connector

### ISA Interface Card



- Fast scan times and high performance

#### Characteristics

- Speed: 125, 250, 500 Kbps
- Protocol:
  - DeviceNet Master & Slave
- Software components:
  - OPC Server + DLL Library
- OS Supported:
  - Windows XP, 2000, NT4
- Network diagnostic and configuration software

#### Order Number

**5136-DNP-ISA** ISA bus

### Interface Cards for High Speed Applications



- High speed deterministic communication for control applications
- OEM ready, hardware and software components provided separately
- Supports Poll, Strobe, Change of state (COS) and cyclic I/O messaging
- Provides simultaneous execution of Group2 Client (Master) and server (Slave) operation

#### Characteristics

- Speed: 125, 250, 500 Kbps
- Protocol:
  - DeviceNet Master & Slave
- Software components:
  - OPC Server + DLL Library
- OS Supported:
  - Windows XP, 2000, NT4
- Network diagnostic and configuration software

#### Order Number

**SST-DN3-PCU-1** PCI bus, 3.3/5V, 1 port  
**SST-DN3-PCU-2** PCI bus, 3.3/5V, 2 ports  
**SST-DN3-104-1** PC/104 bus, 1 port  
**SST-DN3-104-2** PC/104 bus, 2 ports  
**SST-DN3-VME-1** VME bus, 1 port  
**SST-DN3-VME-2** VME bus, 2 ports  
**SST-DN3-VME-4** VME bus, 4 ports  
**SST-DN3-OPC** OPC DA Server  
**SST-DN3-CNF-P** Configuration and Diagnostic Console, Parallel Key  
**SST-DN3-CNF-U** Configuration and Diagnostic Console, USB Key

### Interface Cards for Control and Scada Applications



- Deterministic data acquisition
- Auto-mapping of I/O in DPRAM card
- Ready to use: configuration and diagnostic tools

#### Characteristics

- Speed: 125, 250, 500 Kbps
- RoHS Compliant
- Protocol:
  - DeviceNet Master & Slave
- Software interfaces included:
  - OPC server, ActiveX Control, Wonderware DAserver, Wonderware I/O server, DLL Library
- Various OS supported:
  - Win 32-bits, XPe, NTe, VxWorks, QNX, Linux, DOS

#### Order Number

**DRL-DVN-PCU** PCI bus, 3.3/5V  
**DRL-DVN-104** PC/104 bus

## INDUSTRIAL GATEWAYS

### Simple DeviceNet to Ethernet/Serial Tunneling Gateway



- Cost effective gateway solutions
- Allows easy integration of legacy Ethernet/Serial devices to a DeviceNet network
- DIN rail, IP20 mounting

#### Characteristics

- Speed:
  - DeviceNet: 125, 250, 500 Kbps
  - Ethernet: 10/100 Mbps
  - Serial: 300 to 230.4 Kbps
- Protocols:
  - DeviceNet Slave
  - Modbus RTU Master/Slave
  - Modbus ASCII Master/Slave
  - A-B DF1 Master/Slave

#### Order Number

**DRL-DVN-SRE** DeviceNet to Ethernet or Serial gateway

### Simple DeviceNet to AS-interface Tunneling Gateway



- Allows easy integration of AS-i sensors and actuators to DeviceNet network
- Supports 2 AS-i rungs to connect up 104 AS-i devices
- Easy-to-use through buttons and display on the gateway
- DIN rail, IP20 mounting

#### Characteristics

- Speed: 125, 250, 500 Kbps
- Protocols:
  - DeviceNet Slave
  - AS-interface Master v2.1

#### Order Number

**DRL-2ASI-DN** DeviceNet to AS-interface gateway

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Connectors, cordsets and distribution boxes for sensor, actuator and bus network applications.

## BradControl™

Network I/O for on-machine and in-cabinet applications.

## BradPower™

Modular, flexible wiring systems for machine power distribution and motor control.

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