

## FEATURES AND SPECIFICATIONS



## Brad® Foundation Fieldbus Cordsets and Receptacles

**130041 Mini-Change® FF Cordsets**

**130042 Micro-Change® FF Cordsets**

**130040 Micro-Change & Mini-Change FF Receptacles**

**130045 Micro-Change & Mini-Change Tees**

**130044 Micro-Change & Mini-Change Field Attachables**

**Molex releases the Brad Mini-Change and Micro-Change molded connection systems for fast, error-free Foundation Fieldbus installations**

Foundation Fieldbus is a communication protocol used to interconnect field-level instrumentation and control devices to a PLC (Programmable Logic Controller) or DCS (Distributed Control System) controller in a process automation control system. Foundation Fieldbus is employed in the control systems of oil & gas production, refineries, petrochemical plants, chemical manufacturing and pharmaceutical manufacturing.

At the physical-layer level, Foundation Fieldbus allows multiple devices to communicate digitally over the same wire. The Foundation Fieldbus physical layer, i.e., cable/transmission signal requirements, is specified in the ISA SP50.02 and IEC 1158-2 standard for fieldbuses. The cable specifications are listed in the Cable Standard FF-844, which is issued by the Fieldbus Foundation, the organization that controls

and maintains this open standard. Brad Foundation Fieldbus products from Molex are fully compliant to these specifications.

Brad Foundation Fieldbus products from Molex are based on the proven Mini-Change and Micro-Change circular, circular connector families. These sealed, watertight connectors offer the ruggedness required in the most demanding industrial applications. The pre-wired, keyed connectors provide a modular wiring system that is not prone to field wiring termination errors.

For additional product information visit: [www.molex.com/link/fieldbus.html](http://www.molex.com/link/fieldbus.html).

### Features and Benefits

- Mini-Change and Micro-Change are proven, rugged connector designs
- IP67-rated connectors provide a dust-tight and water-tight connection
- Quick-connect, modular wiring system with keyed, pre-wired molded connectors provide fast installation that eliminates field wiring errors
- Foundation Fieldbus 'Type A' compliant shielded cables allows users to take full advantage of the maximum run lengths possible per the protocol while minimizing the potential for communication errors
- Stainless steel or nickel plated cordset coupling nuts and receptacle shells ensure corrosion resistance in demanding environments



## SPECIFICATIONS

### Mini-Change

#### Electrical

Voltage (max.): 300V AC/DC

Amperage (max.): 10A

Initial Contact Resistance: < 5mΩ avg. @ 3σ

Resistance after Durability Testing: < 5mΩ avg. @ 3σ

#### Mechanical

Molded Body: PVC

Insert: PVC

Contact: Patented, Quad-Beam Design. Brass with Gold Plate. Stainless Steel Outer Sleeve

Coupling Nut / Receptacle Shell: 316 Stainless Steel or Nickel Plated Brass

Axial Pull Strength: 100 lbs

Side Load Strength: 20 lbs

#### Environmental

Environmental Seal: IP67

Cable Temperature: -40° to +105°C (-40° to +221°F)

### Micro-Change

#### Electrical

Voltage (max.): 250V AC / DC

Amperage (max.): 4A

Initial Contact Resistance: < 5mΩ avg. @ 3σ

Resistance after Durability Tests: < 5mΩ avg. @ 3σ

#### Mechanical

Molded Body: PVC

Insert: Nylon

Contact: Brass with Gold Plate.

O-ring: Viton

Coupling Nut / Receptacle Shell: 316 Stainless Steel or Nickel Plated Brass

Axial Pull Strength: 50 lbs.

Side Load Strength: 20 lbs.

#### Environmental

Environmental Seal: IP67

Cable Temperature: -40° to +105°C (-40° to +221°F)

## APPLICATIONS



## Brad® Foundation Fieldbus Cordsets and Receptacles

*Foundation Fieldbus is commonly found in the following Process Automation implementations:*

- Oil & Gas Production and Transportation Facilities
- Oil Refineries
- Petrochemical Complexes
- Chemical Production Plants
- Waste-Water Processing Plants
- Pharmaceutical Manufacturing
- Food & Beverage Processing

**130041** Mini-Change® FF Cordsets

**130042** Micro-Change® FF Cordsets

**130040** Micro-Change & Mini-Change FF Receptacles

**130045** Micro-Change & Mini-Change Tees

**130044** Micro-Change & Mini-Change Field Attachables

## ORDERING INFORMATION

### Mini-Change Cordsets with SS316 Coupling Nuts

		SAP Material #	Engineering Part # **	Description	Sample Plant No.
Single Ended Cordsets	Fem-Str	1300410016	104000D09M0208	MC 4P FP STR SS316 CNUT #18-2 FF Cable – 2M	3313
		1300410017	104000D09M0508	MC 4P FP STR SS316 CNUT #18-2 FF Cable – 5M	N/A
		1300410018	104000D09M1008	MC 4P FP STR SS316 CNUT #18-2 FF Cable – 10M	
	Fem-90D	1300410019	104001D09M0208	MC 4P FP 90 SS316 CNUT #18-2 FF Cable – 2M	N/A
		1300410020	104001D09M0508	MC 4P FP 90 SS316 CNUT #18-2 FF Cable – 5M	
		1300410021	104001D09M1008	MC 4P FP 90 SS316 CNUT #18-2 FF Cable – 10M	
Double Ended Cordsets	Female-Male	1300410028	114030D09M0068	MC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 0.6M	3313
		1300410029	114030D09M0108	MC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 1M	N/A
	Str-Str	1300410030	114030D09M0208	MC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 2M	
		1300410031	114030D09M0308	MC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 3M	
		1300410032	114030D09M0408	MC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 4M	
		1300410033	114030D09M0508	MC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 5M	

### \*\*Available Cable Options

D07 18/3 Orange FF Shielded Cbl, w/gnd, w/drain, PVC  
D08 18/3 Blue FF Shielded Cbl, w/gnd, w/drain, PVC

D09 18/2 Orange FF Shielded Cbl, w/o gnd, w/drain, PVC  
D10 18/2 Blue FF Shielded Cbl, w/o gnd, w/drain, PVC

### Mini-Change Receptacles and Accessories with Stainless Steel Hardware

		SAP Material #	Engineering Part #	Description	Sample Plant No.
Receptacles	Female	1300400013	1R4000A42M0058	MC 4P F/FR #18 1/2NPT SSS316 – 0.5M	3313
	Male	1300400014	1R4006A42M0058	MC 4P MR #18 1/2NPT SS316 – 0.5M	3313
		1300400015	1R4M36A42M0058	MC 4P MR #18 M20X1.5 SS316 – 0.5M	N/A
Terminator	Male	1300460004	104006FF8	Mini-Change, Male FF terminator w/ SS316 CNUT	3313
Tee		1300450002	T140140-001FF8	TEE – MC In, MC Out, MC Drop w/ SS316 CNUT	3313
Closure Caps	For Female	1302011110	65-00855S	MC Closure Cap for Female Connector – SS w/ bead chain	3313
	For Male	1302011113	65-00865S	MC Closure Cap for Male Connector – SS w/ bead chain	3313
Field Attachable	Female	1300440001	1A4000-34FF8	MC 4P F-ATTACH STR PG 13.55 FF w SS316 CNUT	3313
	Male	1300440002	1A4006-34FF8	MC 4P M-ATTACH STR PG 13.55 FF w SS316 CNUT	3313
Bulkhead Pass-Thru	Fem-Male	1300131001	1R40301	MC 4P M/MFE BULKHEAD FEED – THRU - SS	N/A



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**Micro-Change Cordsets with SS316 Coupling Nuts**

		SAP Material #	Engineering Part # **	Description	Sample Plant No.
Single Ended Cordsets	Fem-Str	1300420030	804000D09M0208	MIC 4P FP STR SS316 CNUT #18-2 FF Cable – 2M	3313
		1300420031	804000D09M0508	MIC 4P FP STR SS316 CNUT #18-2 FF Cable – 5M	N/A
		1300420032	804000D09M1008	MIC 4P FP STR SS316 CNUT #18-2 FF Cable – 10M	
Single Ended Cordsets	Fem-90D	1300420033	804001D09M0208	MIC 4P FP 90 SS316 CNUT #18-2 FF Cable – 2M	N/A
		1300420034	804001D09M0508	MIC 4P FP 90 SS316 CNUT #18-2 FF Cable – 5M	
		1300420035	804001D09M1008	MIC 4P FP 90 SS316 CNUT #18-2 FF Cable – 10M	
Double Ended Cordsets	Fem-Male	1300420042	884030D09M0068	MIC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 0.6M	3313
	Str-Str	1300420043	884030D09M0108	MIC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 1M	N/A
		1300420044	884030D09M0208	MIC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 2M	
		1300420045	884030D09M0308	MIC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 3M	
		1300420046	884030D09M0408	MIC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 4M	
		1300420047	884030D09M0508	MIC 4P M/MFE STR/STR SS316 CNUT #18-2 FF Cable – 5M	

**\*\*Available Cable Options**

D07 18/3 Orange FF Shielded Cbl, w/gnd, w/drain, PVC  
 D08 18/3 Blue FF Shielded Cbl, w/gnd, w/drain, PVC

D09 18/2 Orange FF Shielded Cbl, w/o gnd, w/drain, PVC  
 D10 18/2 Blue FF Shielded Cbl, w/o gnd, w/drain, PVC

**Micro-Change Receptacles and Accessories with Stainless Steel Hardware**

		SAP Material #	Engineering Part #	Description	Sample Plant No.
Receptacle	Female	1300400006	WR4000A42M0058	MIC 4P F/FR #18 1/2NPT – SS316 – 0.5M	N/A
Receptacle	Male	1300400007	WR4006A42M0058	MIC 4P MR# 18 1/2 NPT – SS316 – 0.5M	3313
Terminator	Male	1300460008	804006FF8	Micro-Change, Male FF terminator w/SS316 CNUT	3313
Tee		1300350097	MIC5558	TEE – MIC In, MIC Out, MIC Drop w/ SS316 CNUT	3313
Closure Caps	For Female	1200770065	80014	M12 Closure Cap for Fem Connector, SS w/SS bead chain	3313
Closure Caps	For Male	1200770139		M12 Closure Cap for Male Connector, SS w/ SS bead chain	3313
Bulkhead Feed-Thru	Fem-Male	1200700408	8R4L301	MIC4P M/MFE BULKHEAD FEED-THRU-SS	N/A

[www.molex.com/link/fieldbus.html](http://www.molex.com/link/fieldbus.html)

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## JONHON

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