

Table of Contents

1. SCOPE.....	2
2. PRODUCT DESCRIPTION.....	2
2.1 Series and Part numbers.....	2
2.2 Dimensions, Materials, Platings.....	3
2.3 Safety Agency Listings	4
2.4 Pictures	4
3. MECHANICAL CHARACTERISTICS.....	6
3.1 Locking mechanism insertion and withdrawal forces	6
3.2 Locking mechanism retention force	6
3.3 Mating Cycles – Mechanical operation	6
3.4 IP Rating Degree of Protection	6
3.5 Vibration.....	6
3.6 Shock.....	6
3.7 Mechanical strength of flexing – Rotating Test	6
4. ENVIRONMENT	6
4.1 Operating Temperature Ranges.....	6
4.2 Climatic Characteristics.....	7
4.3 Corrosion industrial atmosphere.....	7
4.4 Flammability	7
5. ELECTRICAL CHARACTERISTICS	7
5.1 Voltage.....	7
5.2 Current.....	8
5.3 Clearance and Creepage	8
5.4 Electrical transmission performance requirements	8
6. PACKAGING	8
7. QUALIFICATION TESTS.....	8

REVISION: B	ECR/ECN INFORMATION: EC No: 735249 DATE: 2023 / 01 / 17	TITLE: Product Specification for UL 2.0 U12 3-12P _C	SHEET No. 1 of 8
DOCUMENT NUMBER: 1204000001 PS P10	CREATED / REVISED BY: S. Moradi	CHECKED BY: J.Elizaincin	APPROVED BY:

1. SCOPE

This Product Specification covers the new Ultra Lock M12 connection system design, in style of the new Ultra Lock Standard IEC 61076-2-010, for female cord sets (which are compatible with the previous versions of the Ultra Lock standard male receptacles) and male receptacles (which are compatible with the previous versions of the Ultra Lock standard female cord sets), and for male cord sets (which are compatible with the previous versions of the Ultra Lock standard female receptacles) and female receptacles (which are compatible with the previous versions of the Ultra Lock standard male cord sets).

This system consists of 5 circuit sizes, 3, 4, 5, 8 and 12 cct, Cord sets and Receptacle Connectors, female and male, two codings A and D, different mounting types and threads, various materials, cables, lengths, colours and connector- and cable-ends, i.e. male to open end, male to male, male to female, straight, right angle, ...

- Application: These connectors are used in industrial premises.

2. PRODUCT DESCRIPTION

2.1 Series and Part numbers

120400	MIC UL 2.0 DC Single Ended Cordset
120401	MIC UL 2.0 DC Double Ended Cordset
120402	MIC UL 2.0 Splitters
120403	MIC UL 2.0 Shielded Cordset
120404	MIC UL 2.0 DC Receptacles
120405	MIC UL 2.0 DC Attachables
120406	MIC UL 2.0 D-Coded Cordsets and Receptacles

No.	Name Molex	Molex PN / Drawing
	CSE U12 XP YC FE XM SE UNSH BK PA	1204000025PSD/ 1204000100PSD/ 1204000224PSD/ 1204000300PSD
	CSE U12 XP YC MA XM SE UNSH BK PA	1204000061PSD/ 1204000116PSD/ 1204000260PSD/ 1204000316PSD
	CSE U12 XP YC FE MA XM DE UNSH BK PA	1204010001PSD/ 1204010025PSD/ 1204010037PSD/ 1204010061PSD/

REVISION: B	ECR/ECN INFORMATION: EC No: 735249 DATE: 2023 / 01 / 17	TITLE: Product Specification for UL 2.0 U12 3-12P _C	SHEET No. 2 of 8
DOCUMENT NUMBER: 1204000001 PS P10	CREATED / REVISED BY: S. Moradi	CHECKED BY: J.Elizaincin	APPROVED BY:

		1204010073PSD/ 1204010097PSD/ 1204010109PSD/ 1204010133PSD
	REC U12 XP YC FE M16 BM WIR BRASS NI	1204040001PSD
	REC U12 XP YC FE M16 BM SOL BRASS NI	1204040006PSD
	REC U12 XP YC FE PG9/M16 FM WIR BRASS NI XM	1204040011PSD/ 1204040021PSD
	REC U12 XP YC FE PG9/M16 FM SOL BRASS NI	1204040016PSD/ 1204040026PSD
	REC U12 XP YC MA M16 BM WIR BRASS NI	1204040046PSD
	REC U12 XP YC MA M16 BM SOL BRASS NI	1204040054PSD
	REC U12 XP YC MA PG9/M16 FM WIR BRASS NI XM	1204040058PSD/ 1204040066PSD
	CSE U12 4P DC FE XM SE UNSH BK PA	1204060001PSD/ 1204060008PSD
	CSE U12 4P DC MA XM SE UNSH BK PA	1204060016PSD/ 1204060023PSD
	CSE U12 4P DC FE MA XM DE UNSH BK PA	1204061000PSD/ 1204061004PSD

See sales drawings for details on the part numbers.

2.2 Dimensions, Materials, Platings

Housings:	Contact Inserts: PA66 UL94 V-0 or TPU UL94 HB Sleeves: Zinc Diecast Nickel plated, Brass Nickel plated, PA66 UL94 V-0 or Stainless Steel
Locking Device:	Stainless Steel
Seals:	FPM, EPDM or NBR
Terminals:	Copper Alloy, Gold over Nickel plated
Potting Compound:	PUR UL94 V-0
Overmolding:	TPC UL94 HB
Cable Jackets:	PVC, PUR, PUR Special WSOR or TPE
Single Wires Isolation:	PVC
Lock Nuts:	Brass Nickel plated
Label:	Vinyl
Tag Carrier:	PVC UL94 V-0

These new Cordsets have their inserts in white colour.

See sales drawings for details on dimensions.

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
B	EC No: 735249 DATE: 2023 / 01 / 17	Product Specification for UL 2.0 U12 3-12P _C	3 of 8
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
1204000001 PS P10	S. Moradi	J.Elizaincin	

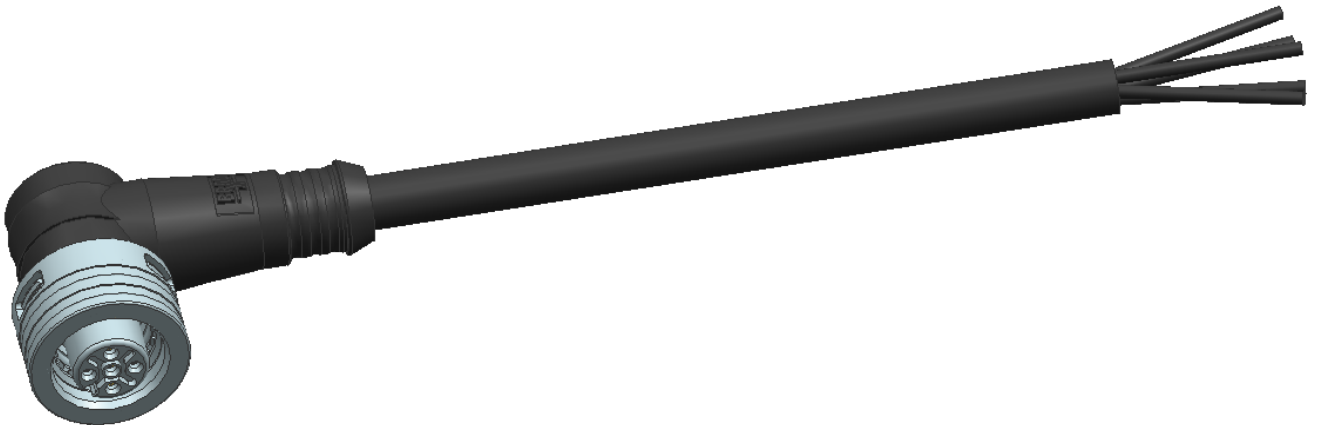
2.3 Safety Agency Listings

Cord Sets and Receptacles A-Code: CSA File Number LR 6837, marking cCSAus.

The D-Code products are pending.

2.4 Pictures

Examples Female Cord Set:



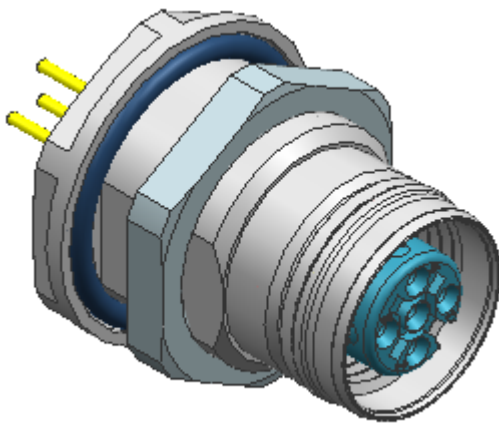
Examples Male Cord Set:



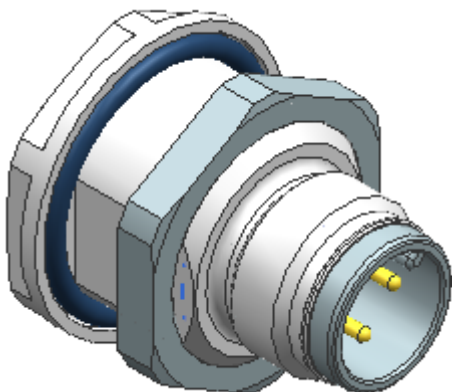
<p>REVISION: B</p>	<p>ECR/ECN INFORMATION: EC No: 735249 DATE: 2023 / 01 / 17</p>	<p>TITLE: Product Specification for UL 2.0 U12 3-12P _C</p>	<p>SHEET No. 4 of 8</p>
<p>DOCUMENT NUMBER: 120400001 PS P10</p>	<p>CREATED / REVISED BY: S. Moradi</p>	<p>CHECKED BY: J.Elizaincin</p>	<p>APPROVED BY:</p>



Example Female Receptacle:



Example Male Receptacle:



REVISION: B	ECR/ECN INFORMATION: EC No: 735249 DATE: 2023 / 01 / 17	TITLE: Product Specification for UL 2.0 U12 3-12P _C	SHEET No. 5 of 8
DOCUMENT NUMBER: 1204000001 PS P10	CREATED / REVISED BY: S. Moradi	CHECKED BY: J.Elizaincin	APPROVED BY:

3. MECHANICAL CHARACTERISTICS

3.1 Locking mechanism insertion and withdrawal forces

According to IEC 61076-2-010.

Mate and lock the parts coaxially aligned, fully pushing against the stop. After mating, pull the part back to check.

Withdraw the parts by pulling the locking ring and the part.

3.2 Locking mechanism retention force

According to IEC 61076-2-010.

3.3 Mating Cycles – Mechanical operation

According to IEC 61076-2-010.

3.4 IP Rating Degree of Protection

According to IEC 61076-2-010.

3.5 Vibration

According to IEC 61076-2-010.

3.6 Shock

According to IEC 61076-2-010.

3.7 Mechanical strength of flexing – Rotating Test

Conditions: IEC 60998-2-1, test 10.104, Standard atmospheric conditions.
Load of 3kg., rotation speed 40 rpm, cycles 15000.

4. ENVIRONMENT

4.1 Operating Temperature Ranges

Plug/socket: -40/+85 °C

Single Wires: PVC Wires, max. +105 °C

REVISION: B	ECR/ECN INFORMATION: EC No: 735249 DATE: 2023 / 01 / 17	TITLE: Product Specification for UL 2.0 U12 3-12P _C	SHEET No. 6 of 8
DOCUMENT NUMBER: 1204000001 PS P10	CREATED / REVISED BY: S. Moradi	CHECKED BY: J.Elizaincin	APPROVED BY:

Cables:

Fixed Installation *		Flexible Installation **		Drag Chain		unit	Remark
min.	max.	min.	max.	min.	max.		
-40	+90	-25	+80	-5	+60	°C	Cable WSOR PUR
-40	+80	-25	+80	+5	+60	°C	Cables PUR, PUR-LS0H
-30	+80	-10	+80	Not suitable		°C	Cable PVC
-20	+75	-5	+75	-----	-----	°C	Cable TPE

* fixed position without accidental crushing or vibration.

** free motion without periodic recurrence or forced guidance.

4.2 Climatic Characteristics

According to IEC 61076-2-010.

4.3 Corrosion industrial atmosphere

According to IEC 61076-2-010.

4.4 Flammability

Cord Sets Connectors: UL 94 V-0

Overmold: UL 94 HB

Receptacles: UL 94 HB

Cables: Cable PVC, WSOR PUR: IEC 60332-1, CSA FT1

Cable PUR: CSA FT2

Cable TPE: UL1685

Wires PVC: VW-1, CSA FT1

Label: FMVSS 302

Tag Carrier: UL94 V-0

5. ELECTRICAL CHARACTERISTICS

5.1 Voltage

		unit	Remark
Pollution degree	-----		According to IEC 61076-2-010
Insulation resistance	-----	Ω	According to IEC 61076-2-010
Dielectric strength	-----	V	According to IEC 61076-2-010
Rated Voltage	-----	V	According to IEC 61076-2-010, except for D-Code which is 60V

REVISION: B	ECR/ECN INFORMATION: EC No: 735249 DATE: 2023 / 01 / 17	TITLE: Product Specification for UL 2.0 U12 3-12P _C	SHEET No. 7 of 8
DOCUMENT NUMBER: 1204000001 PS P10	CREATED / REVISED BY: S. Moradi	CHECKED BY: J.Elizaincin	APPROVED BY:

5.2 Current

		unit	Remark
Max. contact resistance	-----	mΩ	According to IEC 61076-2-010
Rated Current	-----	A	According to IEC 61076-2-010, except for D-Code which is 1.5A. Derating has to be considered

5.3 Clearance and Creepage

According to IEC 61076-2-010.

5.4 Electrical transmission performance requirements

D-Code Double Ended Cordsets: According to IEC 61076-2-010 and ISO/IEC 11801 CAT5e Patch Cord PROFINET Type C.

6. PACKAGING

The finished goods are delivered in Molex standard plastic bags, single packed, or in trays and in carton boxes.

Parts shall be packaged to protect them against damage during handling, transit and storage.

7. QUALIFICATION TESTS

See Test Summary 1204000001 PDP T10.

REVISION: B	ECR/ECN INFORMATION: EC No: 735249 DATE: 2023 / 01 / 17	TITLE: Product Specification for UL 2.0 U12 3-12P _C	SHEET No. 8 of 8
DOCUMENT NUMBER: 1204000001 PS P10	CREATED / REVISED BY: S. Moradi	CHECKED BY: J.Elizaincin	APPROVED BY: