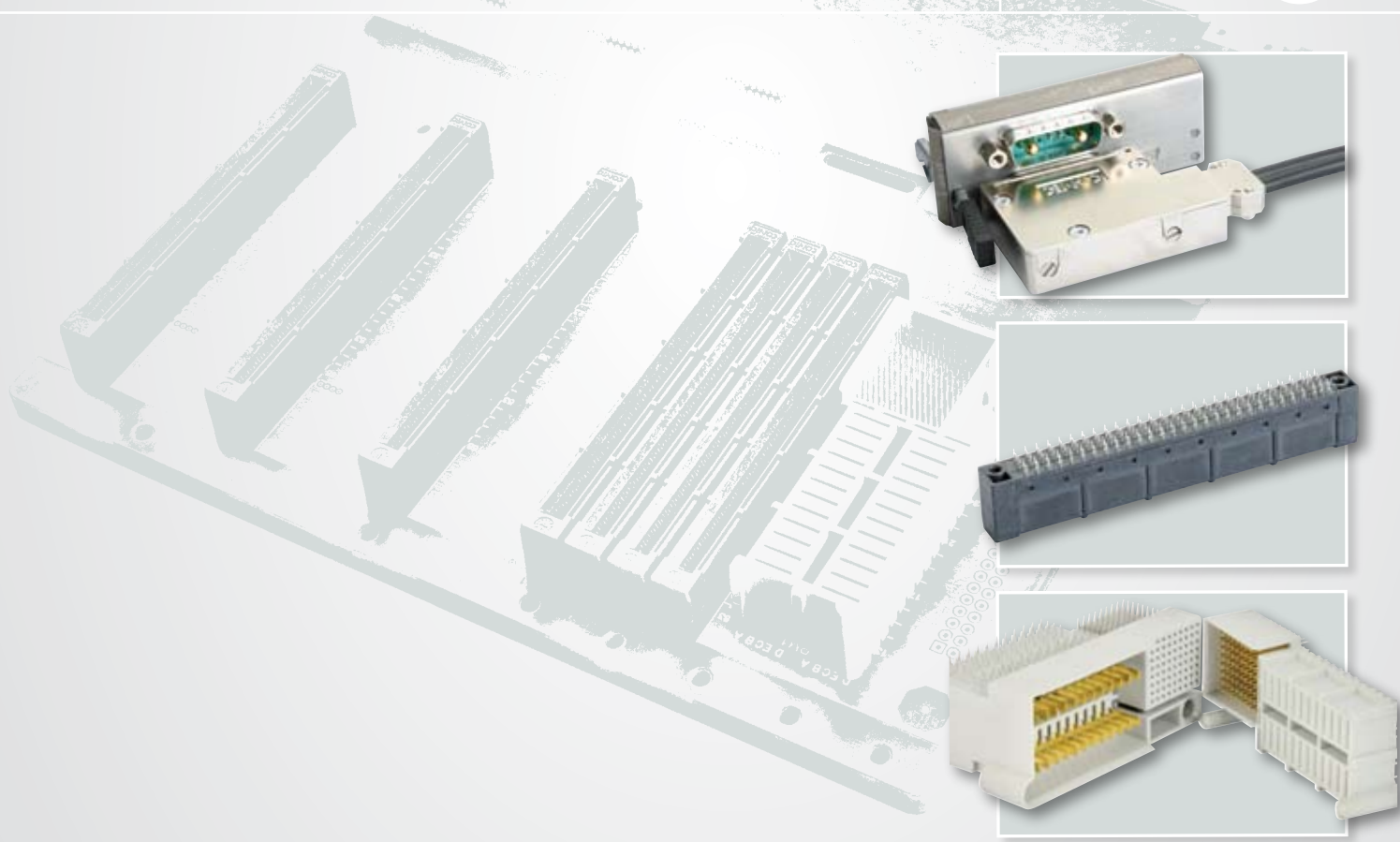




TECHNOLOGY IN CONNECTORS™

***μTCA***™ CONNECTOR PRODUCT RANGE



# HIGH-POWER AND RELIABLE SIGNALS – EVEN WHEN THINGS GET A BIT TIGHT: CONEC CONNECTORS FOR MicroTCA APPLICATIONS

As in former standards, the PICMG®-consortium strongly focuses in the MicroTCA specification, on the reliability of systems in combination with a high flexibility of the platform to be constructed for a wide range of applications in a short time.

Quality and flexibility of a system are more and more defined by the choice of components which are used to build-up these platforms. Therefore, standardization groups define minimum requirements and describe standards for components which shall be used in standard platforms. On this basis flexible and cost-effective systems can be designed to meet current and future requirements.

CONEC is a member of the PICMG®- consortium, playing an active role in defining future connection technology for reliable systems. CONEC, a manufacturer of precision connectors now offers the full range of interface defined in the Micro-TCA.0 specification.

The MicroTCA system uses a modular system which in the standard configuration can consist of up to two power supply modules, two MicroTCA Carrier Hubs (MCH) and up to 12 Advanced Mezzanine Cards (AMC). These modules are connected to the backplane in a MicroTCA shelf using the MicroTCA connectors.

Power supply modules require one interface to connect to external energy on the front side and a second connector to distribute the power in a defined way from the power module into the backplane.

MCH and AMC modules use a special PCB design and are directly plug in compatible into the special connector mounted on the systems backplane.

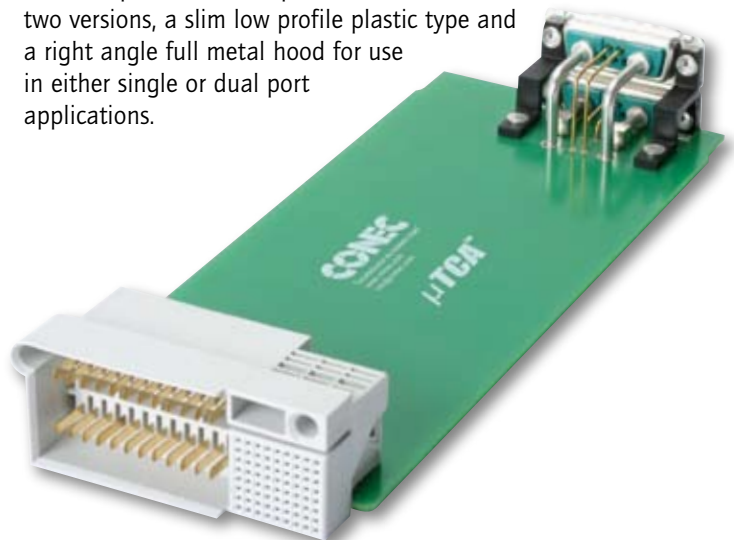
## POWER INPUT CONNECTORS FOR POWER MODULES

Micro-TCA.0 specification defines Combination D-SUB connectors type 7W2 and 9W4 as interfaces for the external power input for power supply modules.

The connectors have two power contacts each with a current carrying capacity of 24A per power pin for the 7W2 version (for use in power modules with 48/60V) and 49A for the 9W4 version (module with 24V) and 2 signal contacts.

The suitable socket connector for the cable side also consists of two power and two signal contacts, but these signal contacts should be bridged. The bridged contacts signal the power module that the external power source cable is connected to the module.

The CONEC range for power module input connectors includes single and dual port versions with through hole and SMT termination. This includes connectors for cable connection with crimp and solder cup contacts. Hoods are available in two versions, a slim low profile plastic type and a right angle full metal hood for use in either single or dual port applications.





#### POWER OUTPUT CONNECTOR FOR POWER MODULE AND BACKPLANE

The hybrid connector with 24 power contacts in two rows and 72 signal contacts in 8 rows is used to distribute the power from the power module into the system. An angled version is applied to the PCB for the power module while the straight version is designed for mounting to the backplane.

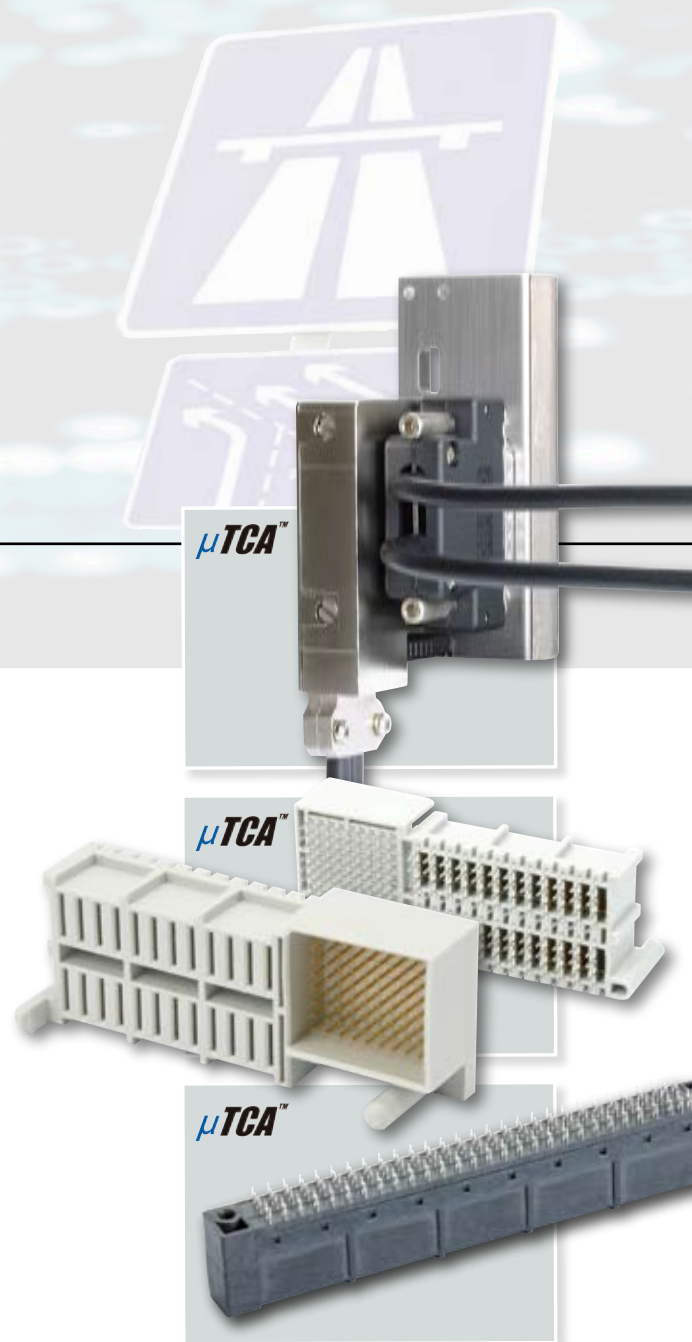
Alignment pins on the connector insulator allow the module to be mated safely and with precision aligning. In order to meet the system's high availability, "hot swap" is possible to exchange a power module while power is on.

The power module output connectors feature what are known as "hot plug" contacts, that allow the exchange of power modules. As with all power connectors the current carrying capacity of the power contacts is very important. It is specified as 9.3A per pin, with a derating in accordance with IEC 60512. CONEC supplies this connector with a patent-free symmetrical footprint in press-fit termination.

#### CARD EDGE CONNECTORS FOR AMC AND MCH

The CONEC MicroTCA features 170-pin high speed signal connector which is used for the interconnection of AMC and MCH modules into the backplane. These connectors are characterized by their ability to transfer high data rates of up to 12.5 Gbps. The AMC backplane connector features press-fit (eye of the needle) contacts and is designed to allow up to 200 mating cycles.

An integrated shield between the contact rows insure the connector performance in transferring high data rates. CONEC provides a complete interconnection package for the MicroTCA platform. The product offering consist of high performance power input and power output connectors and high speed backplane edge connectors.



# MICROTCA POWER MODULE INPUT CONNECTOR IN ACCORDANCE TO MICROTCA.0 SPECIFICATION

## Technical Data

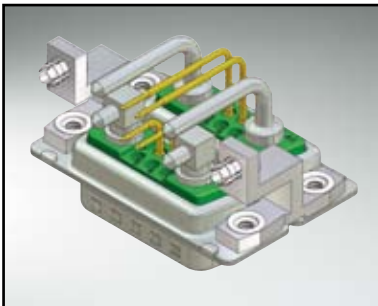
	Material	Finish
Insulator	PBT, UL 94-V0	
Power contacts	Copper alloy, screw machined contacts	Mating area Au over Ni Termination area Sn over Ni
Signal contacts	Copper alloy, screw machined contacts	Mating area Au over Ni Termination area Sn over Ni
Shell	Steel	Tin plated
Mounting brackets	Zinc diecast	Tin plated
Thread insert UNC4-40	Copper alloy	Tin plated
Hexagonal bolts with UNC4-40 thread and washers	Steel	Nickel plated
Boardlock for 1,6 mm PCB	Copper alloy	Tin plated
<b>Electrical Characteristics</b>		
Current rating	Power contacts	24 A per pin @ max. 30°C temperature rise
	Signal contacts	7,5 A nominal
Creepage and clearance distances	Power contacts	1,5 mm min.
	Signal contacts	0,4 mm min.
	Signal and power contacts	1,5 mm min.
	Power contacts and shell	1,5 mm min.
	Signal contacts and shell	1,5 mm min.
Insulation withstanding between	Power contacts	5000 MOhm min.
	Signal contacts	5000 MOhm min.
	Signal and power contacts	5000 MOhm min.
	Power contacts and shell	5000 MOhm min.
	Signal contacts and shell	5000 MOhm min.
Voltage proof	100 V r.m.s.	
<b>Mechanical Characteristics</b>		
Mating cycles	250	
Mating force	100 N max.	
Withdrawal force	65 N max.	

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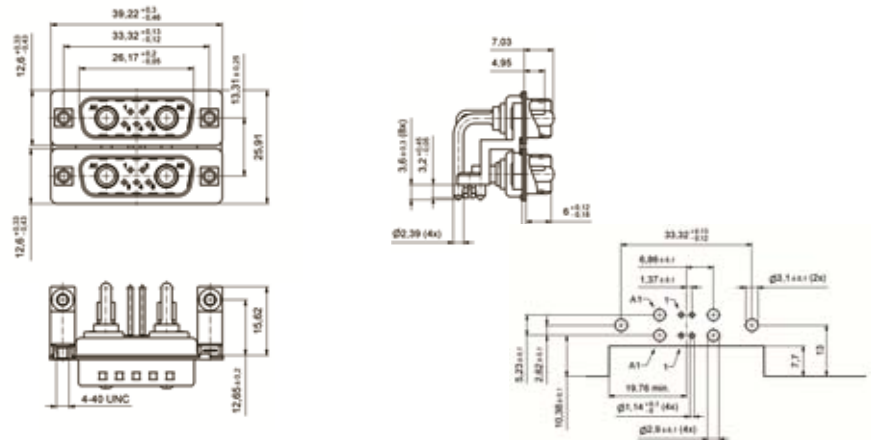
Technical alterations are subject to change without notice.

# POWER MODULE INPUT CONNECTOR - DUAL PORT

## Solder Version with and without filter



### TECHNICAL DATA



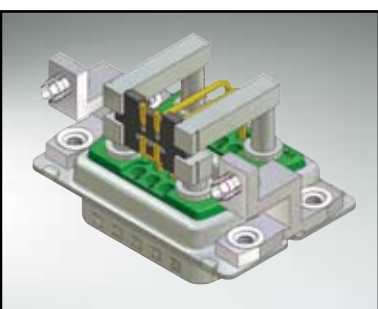
- Standard and filter version
- 7W2 type for 48 / 60V power modules
- 9W4 type for 24V power modules on request

### ORDERING OPTIONS

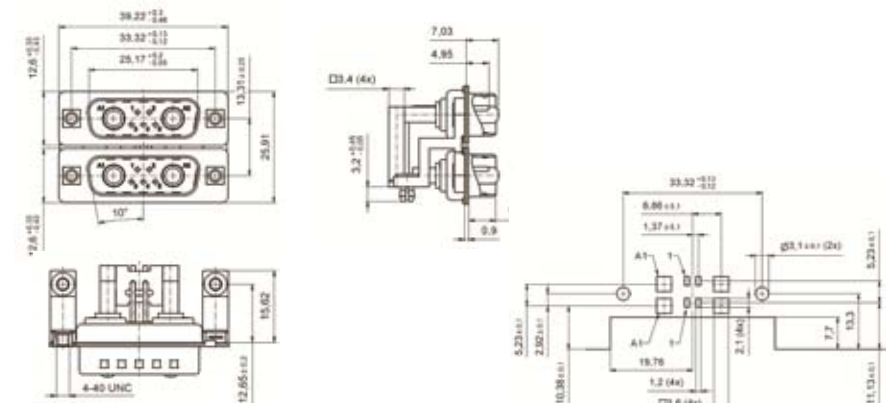
Mounting options shell	Filter options	Part numbers
with UNC 4-40 thread and hex bolts UNC 4-40	-	13-000011
with UNC 4-40 thread without hex bolts	-	13-000021
with UNC 4-40 thread and hex bolts UNC 4-40	54 nF	24-000031
with UNC 4-40 thread without hex bolts	54 nF	24-000011
with UNC 4-40 thread and hex bolts UNC 4-40	10 nF	24-000041
with UNC 4-40 thread without hex bolts	10 nF	24-000051

# POWER MODULE INPUT CONNECTOR - DUAL PORT

## SMD VERSION



### TECHNICAL DATA



- SMD version
- 7W2 type for 48 / 60V power modules
- 9W4 type for 24V power modules on request

### ORDERING OPTIONS

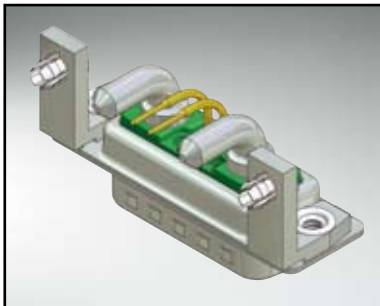
Mounting options shell	Filter options	Part numbers
with UNC 4-40 thread and hex bolts UNC 4-40	-	13-000031
with UNC 4-40 thread without hex bolts	-	13-000041

The listed part numbers can be found on our website [www.conec.com](http://www.conec.com)



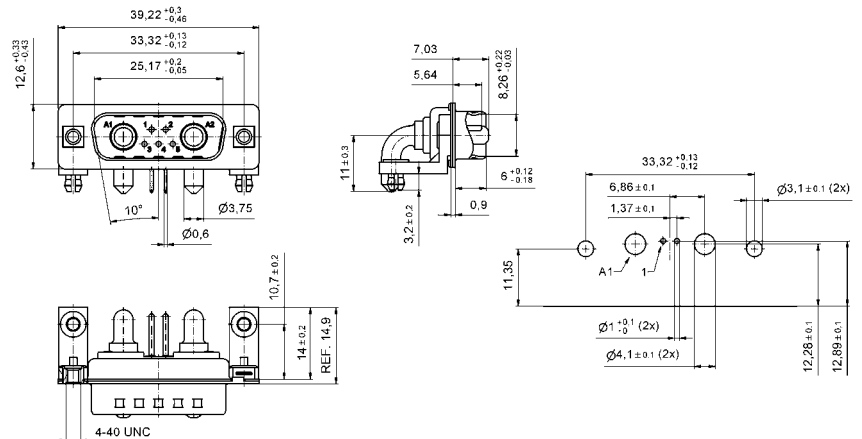
# POWER MODULE INPUT CONNECTOR

## Solder Version with and without Filter



- Standard and filter version
- 7W2 type for 48/60V power modules
- 9W4 type for 24V power modules on request

### TECHNICAL DATA



### ORDERING OPTIONS

Mounting options shell	Filter options	Part numbers
with UNC 4-40 thread and hex bolts UNC 4-40	-	13-000091
with UNC 4-40 thread without hex bolts	-	13-000101
with UNC 4-40 thread and hex bolts UNC 4-40	54 nF	24-000101
with UNC 4-40 thread without hex bolts	54 nF	24-000111
with UNC 4-40 thread and hex bolts UNC 4-40	10 nF	24-000121
with UNC 4-40 thread without hex bolts	10 nF	24-000131

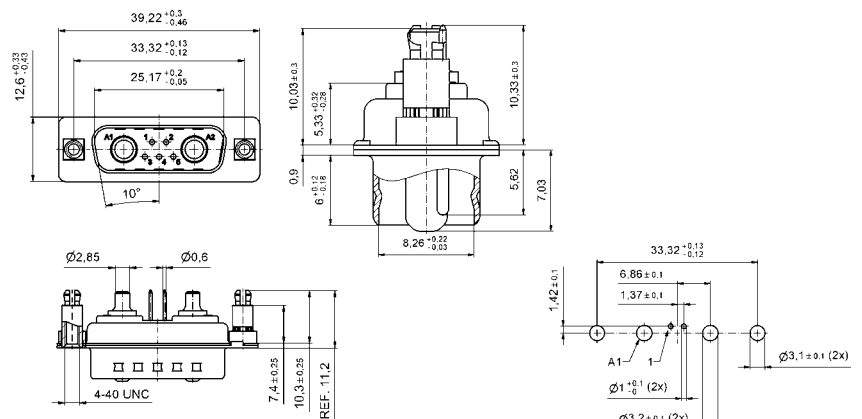
# POWER MODULE INPUT CONNECTOR

## Solder Version with and without Filter



- Standard and filter version
- 7W2 type for 48 / 60V power modules
- 9W4 type for 24V power modules on request

### TECHNICAL DATA



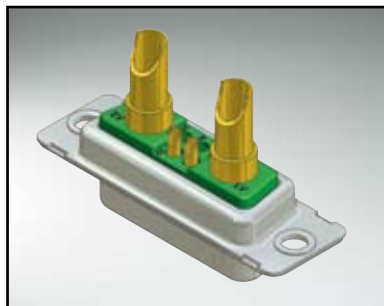
### ORDERING OPTIONS

Mounting options shell	Filter options	Part numbers
with UNC 4-40 thread and hex bolts UNC 4-40	-	13-000111
with UNC 4-40 thread without hex bolts	-	13-000121
with UNC 4-40 thread and hex bolts UNC 4-40	54 nF	24-000141
with UNC 4-40 thread without hex bolts	54 nF	24-000151
with UNC 4-40 thread and hex bolts UNC 4-40	10 nF	24-000161
with UNC 4-40 thread without hex bolts	10 nF	24-000171

The listed part numbers can be found on our website [www.conec.com](http://www.conec.com)

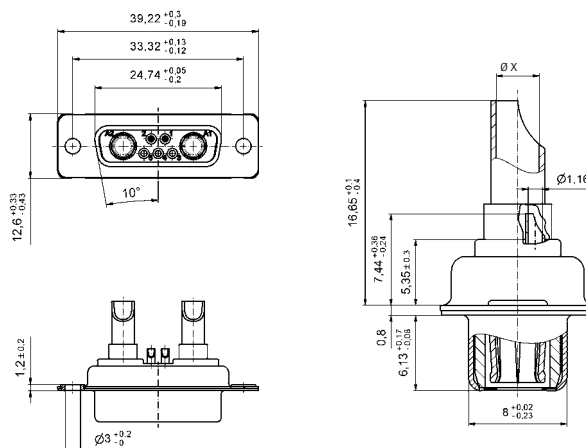
# D-SUB SOCKET FOR MICROTCA POWER MODULE

## Solder Cup Version



- Standard for handsolder
- 7W2 with power and signal contacts
- 9W4 type for 24V power modules on request

### TECHNICAL DATA

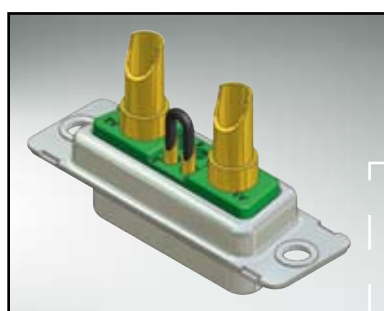


### ORDERING OPTIONS

Applicable cable size	Ø X (mm)	Part numbers
AWG 10-12 for up to 30 A current rating	3,5	13-000131
AWG 12-14 for up to 20 A current rating	2,7	13-000141
AWG 16-20 for up to 10 A current rating	1,8	13-000151

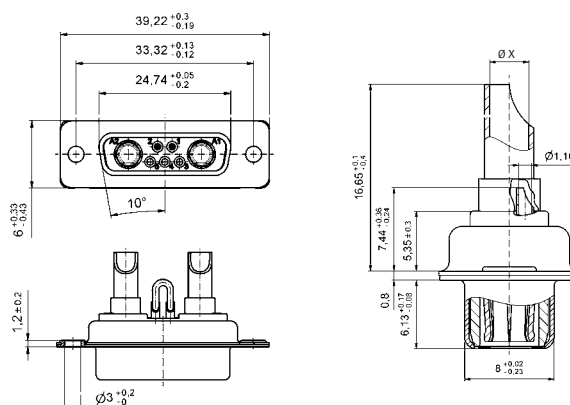
# D-SUB SOCKET FOR MICROTCA POWER MODULE

## Solder Cup Version - Bridged Signal Contacts



- Standard for handsolder
- 7W2 with power and signal contacts
- 9W4 type for 24V power modules on request

### TECHNICAL DATA



### ORDERING OPTIONS

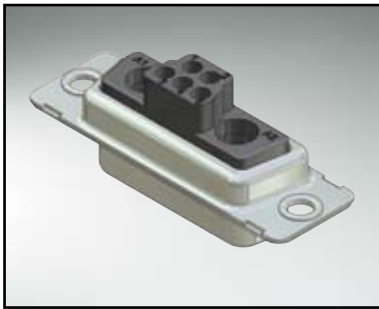
Applicable cable size	Ø X (mm)	Part numbers
AWG 10-12 for up to 30 A current rating	3,5	13-000161
AWG 12-14 for up to 20 A current rating	2,7	13-000171
AWG 16-20 for up to 10 A current rating	1,8	13-000181

The listed part numbers can be found on our website [www.conec.com](http://www.conec.com)

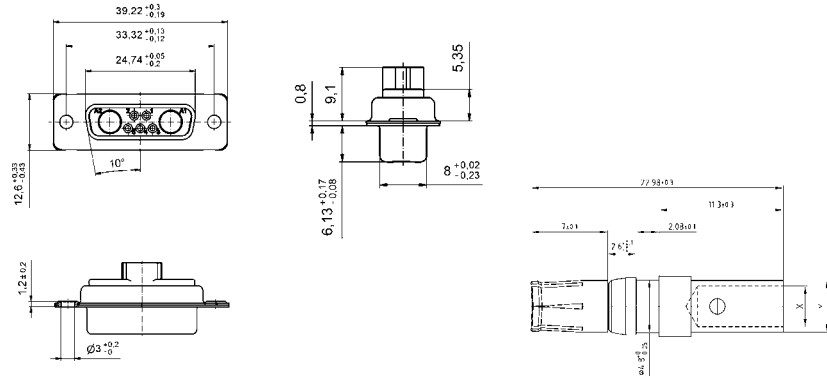


# D-SUB SOCKET FOR MICROTCA POWER MODULE

## Crimp Version



### TECHNICAL DATA



- Standard for crimp contacts
- 7W2 for power and signal contacts
- 9W4 type for 24V power modules on request

### ORDERING OPTIONS

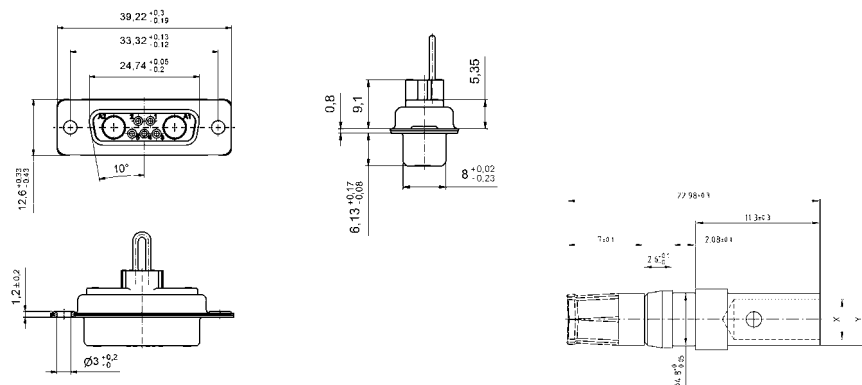
Description	X (mm)	Y (mm)	Part numbers
D-SUB crimp housing 7W2	-	-	13-000190
Power crimp contact AWG 10-12 for up to 30 A current rating	3,7	4,7	132C11039X
Power crimp contact AWG 12-14 for up to 20 A current rating	2,6	3,6	132C11029X
Power crimp contact AWG 16-20 for up to 10 A current rating	1,7	2,6	132C11019X

# D-SUB SOCKET FOR MICROTCA POWER MODULE

## Crimp Version - Bridged Signal Contacts



### TECHNICAL DATA



- Standard for crimp contacts
- 7W2 for power and signal contacts
- 9W4 type for 24V power modules on request

### ORDERING OPTIONS

Description	X (mm)	Y (mm)	Part numbers
D-SUB crimp housing 7W2, bridged signal contacts	-	-	13-000201
Power crimp contact AWG 10-12 for up to 30 A current rating	3,7	4,7	132C11039X
Power crimp contact AWG 12-14 for up to 20 A current rating	2,6	3,6	132C11029X
Power crimp contact AWG 16-20 for up to 10 A current rating	1,7	2,6	132C11019X

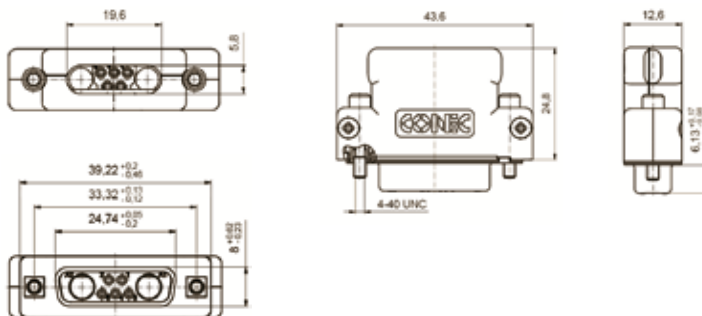
The listed part numbers can be found on our website [www.conec.com](http://www.conec.com)

# MICROTCA HOOD AND CONNECTOR ASSEMBLY

## Plastic Hood with 7W2 Connector



### TECHNICAL DATA



- Bridged and unbridged signal contacts
- Straight cable exit
- Fixing screws with allen wrench or phillips head

### ORDERING OPTIONS

Description	Signal contacts	Fixing screws	Part numbers
Plastic hood with 7W2 female crimp connector*	no	short, allen wrench head	13-000210
Plastic hood with 7W2 female crimp connector*	no	short, phillips head	13-000220
Plastic hood with 7W2 female crimp connector*	yes, bridged	short, allen wrench head	13-000231
Plastic hood with 7W2 female crimp connector*	yes, bridged	short, phillips head	13-000241

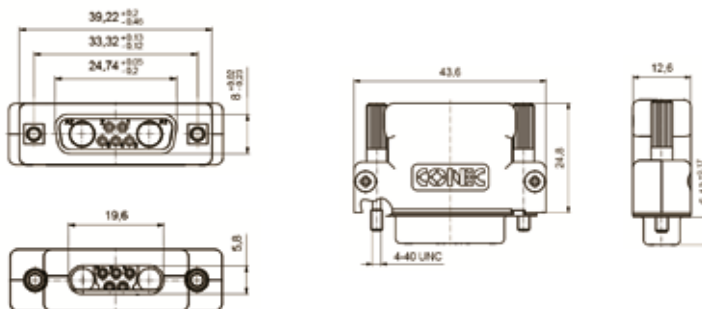
\* Applicable power and signal contacts see next page

# MICROTCA HOOD AND CONNECTOR ASSEMBLY

## Plastic Hood with 7W2 Connector



### TECHNICAL DATA



- Bridged and unbridged signal contacts
- Straight cable exit
- Fixing screws with allen wrench or phillips head

### ORDERING OPTIONS

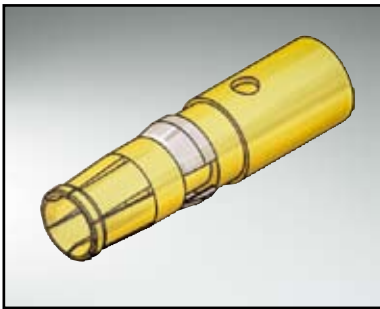
Description	Signal contacts	Fixing screws	Part numbers
Plastic hood with 7W2 female crimp connector*	no	Jack screw, allen wrench head	13-000370
Plastic hood with 7W2 female crimp connector*	no	Jack screw, phillips head	13-000380
Plastic hood with 7W2 female crimp connector*	yes, bridged	Jack screw, allen wrench head	13-000391
Plastic hood with 7W2 female crimp connector*	yes, bridged	Jack screw, phillips head	13-000401

\* Applicable power and signal contacts see next page

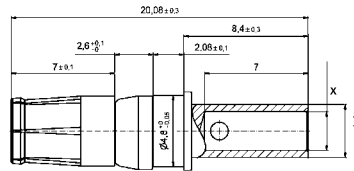
The listed part numbers can be found on our website [www.conec.com](http://www.conec.com)

# CRIMP CONTACTS FOR MICROTCA CABLE HOUSING

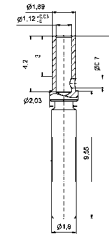
## Power and Signal Contacts



### TECHNICAL DATA



Power Contact



Signal Contact (MIL-Version)

### ORDERING OPTIONS

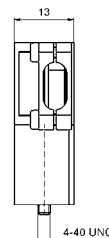
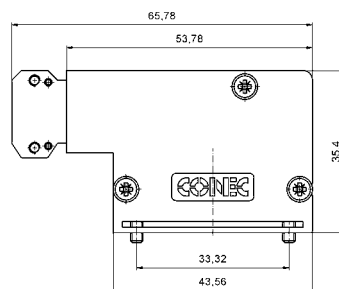
Description	X (mm)	Y (mm)	Part numbers
Power crimp contact AWG 10-8 for up to 40 A current rating	4,6	5,35	13-000321
Power crimp contact AWG 10-12 for up to 30 A current rating	3,7	4,7	13-000311
Power crimp contact AWG 12-14 for up to 20 A current rating	2,6	3,6	13-000301
Power crimp contact AWG 16-20 for up to 10 A current rating	1,7	2,6	13-000291
Signal crimp contact closed entry style			132C15019X

# MICROTCA LOW PROFILE SLIM HOOD

## Zinc Diecast Version



### TECHNICAL DATA



- Side cable entry
- Metal strain relief
- Screw mounting on the power module

### ORDERING OPTIONS

Description	Part numbers
MicroTCA diecast hood	16-000010

The listed part numbers can be found on our website [www.conec.com](http://www.conec.com)

# MICROTCA POWER MODULE OUTPUT CONNECTORS IN ACCORDANCE TO MICROTCA.0 SPECIFICATION

## Technical Data

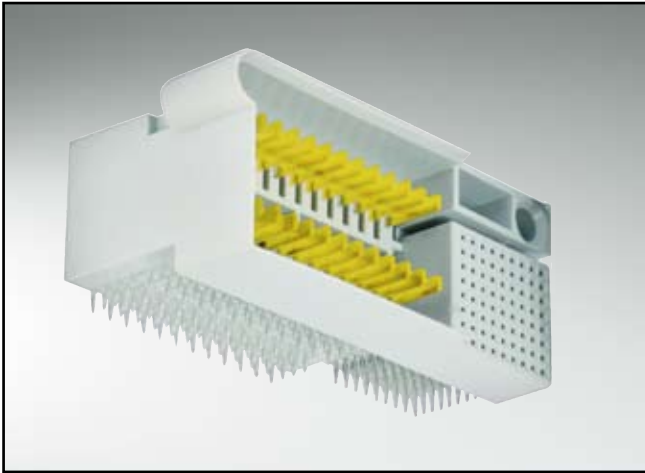
		Material	Finish
Housing material		Thermoplastic polyester, glass filled; UL94-V0	color: grey
Power contacts		Copper alloy	Mating area Au plated
			Termination area matte tin plated
Signal contacts		Copper alloy	Mating area Au plated
			Termination area matte tin plated
Electrical Characteristics			
Current rating (with derating of IEC 60512)		Power contacts and GND contacts	9,3 A per pin @ max. 30°C temperature rise
		Signal and signal GND contacts	0,5 A @ max. 30°C temperature rise
Current rating (connector capability)		Power contacts and GND contacts	11,625 A
		Signal and signal GND contacts	0,625 A
Contact resistance		Power contacts and GND contacts	5 mOhm
		Signal and signal GND contacts	25 mOhm
Insulation resistance		Power contacts	100 MOhm min.
		Signal contacts	100 MOHM min.
Temperature range		- 55°C to + 105°C	
Mechanical Characteristics			
Mating cycles		200	
Mating force		145 N max.	
Withdrawal force		110 N max.	

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# POWER MODULE OUTPUT CONNECTOR

## Power Module Version - Press Fit

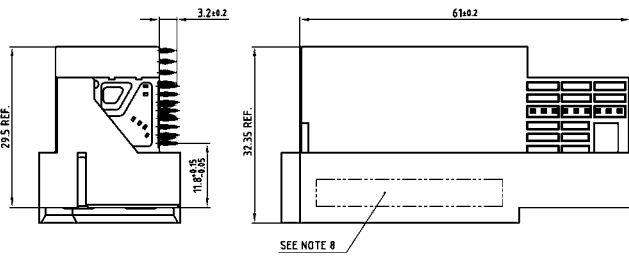
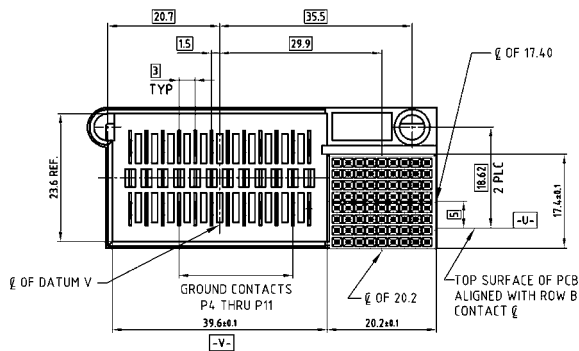


### PRODUCT FEATURES

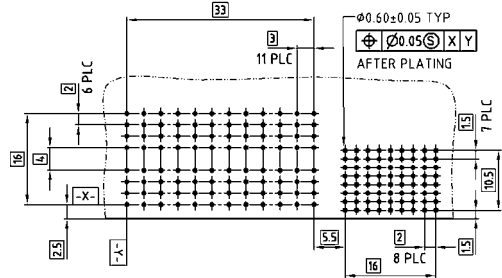
MicroTCA specified connector for power modules.

- 24 power contacts and 72 signal contacts
- Symmetrical footprint
- "Eye of the needle" press fit zone

### TECHNICAL DATA



### RECOMMENDED PC BOARD DIMENSIONS



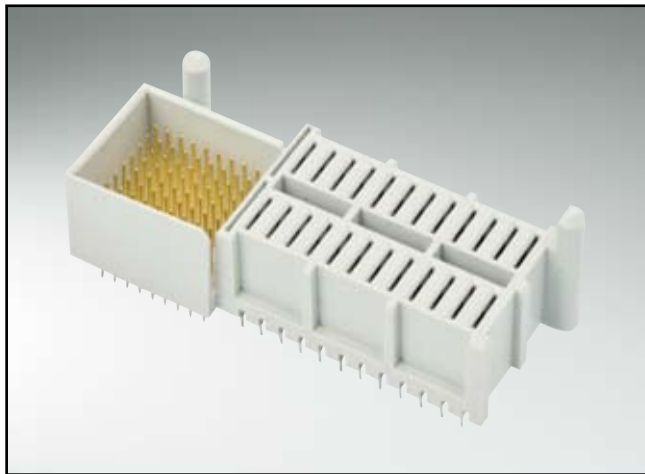
### ORDERING OPTIONS

Description	Part numbers
MicroTCA power module output connector	47-100011

The listed part numbers can be found on our website [www.conec.com](http://www.conec.com)

# POWER MODULE OUTPUT CONNECTOR

## Backplane Version - Press Fit

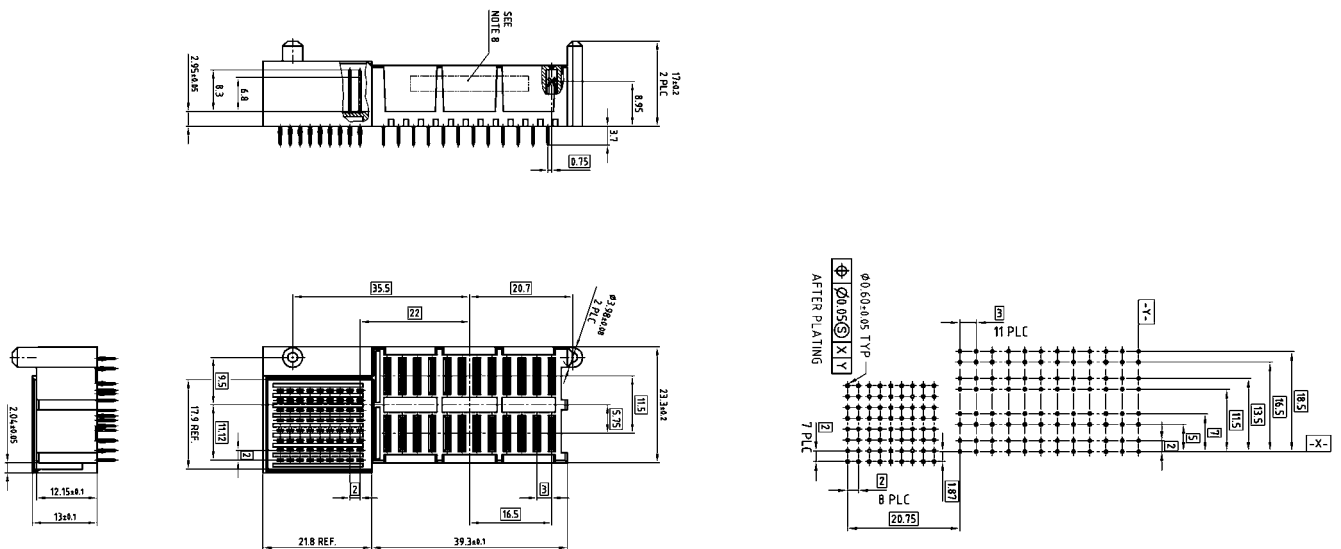


### PRODUCT FEATURES

MicroTCA specified connector for backplanes.

- 24 power contacts and 72 signal contacts
- Symmetrical footprint
- "Eye of the needle" press fit zone

### TECHNICAL DATA



### ORDERING OPTIONS

Description	Part numbers
MicroTCA power output connector - backplane version	47-100001

The listed part numbers can be found on our website [www.conec.com](http://www.conec.com)

# MICROTCA ADVANCEDMC BACKPLANE CONNECTOR IN ACCORDANCE TO MICROTCA.O SPECIFICATION

## Technical Data

	Material	Finish
Housing material	Liquid Crystal Polymer (LCP), UL 94-V0	
Contact material	Copper alloy	Mating area Au over Ni
		Termination Sn over Ni
Electrical Characteristics		
Current rating (IEC 60512)	General purpose contacts	0,4 A min.
Contact material	Ground contacts	0,3 A min.
	Power contacts	1,52 A min.
	Differential pair contacts	0,1 A min.
Contact resistance	25 mOhm	
Insulation resistance	100 MOhm	
Differential Impedance	100 Ohm $\pm$ 10%	
Crosstalk	3% (Multi aggressor condition)	
Differential skew	< 5 ps	

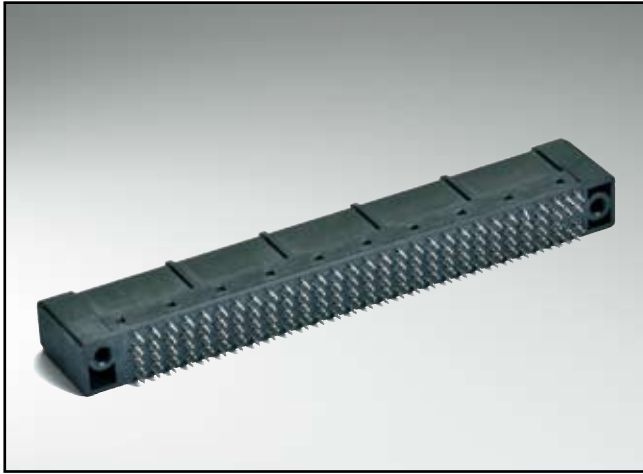
Mechanical Characteristics	
Mating cycles	200
Mating force	100 N max.
Withdrawal force	65 N max.

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# ADVANCEDMC BACKPLANE CONNECTOR

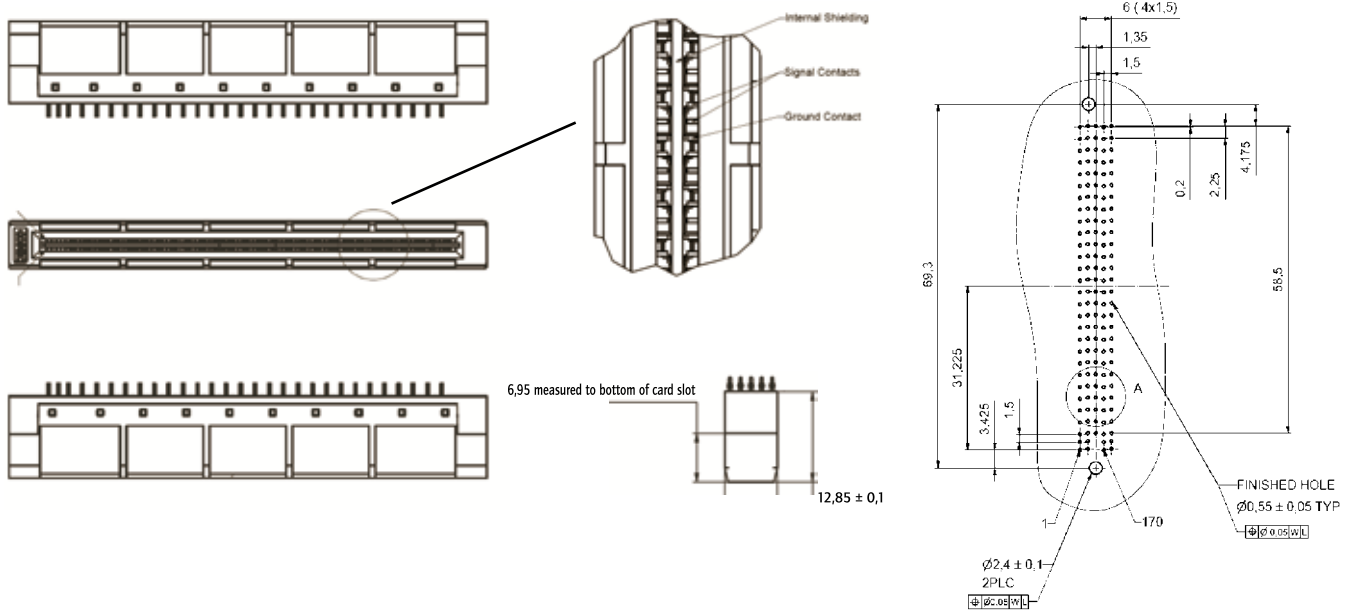
## Advanced Mezzanine Card Connector for MicroTCA



### PRODUCT FEATURES

- 170-poles high speed signal connector for card edge mount of AMC modules into the backplane.
- Data transfer rates up to 12,5 Gbps
- Internal shielding base for improved performance
- "Eye off the needle" press fit contacts

### TECHNICAL DATA

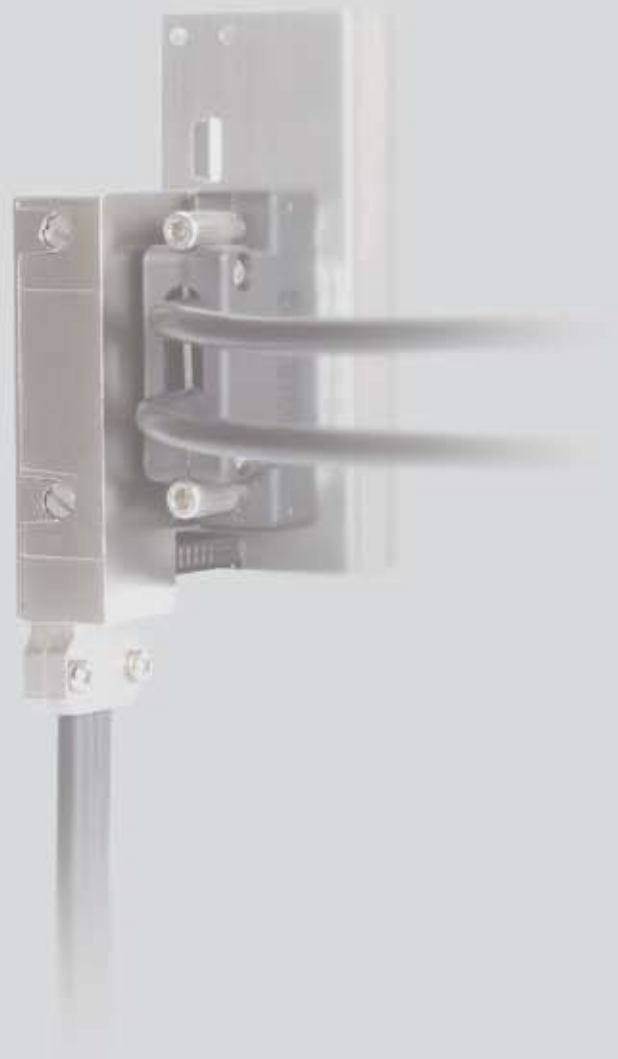


### ORDERING OPTIONS

Description	Part numbers
AMC backplane connector	47-000001

The listed part numbers can be found on our website [www.conec.com](http://www.conec.com)





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