



# WILDCAT CONNECTORS FOR UNMANNED AUTONOMOUS VEHICLES (UAV)

## UNMANNED BUT SECURELY CONNECTED

AEROSPACE, DEFENSE & MARINE / WILDCAT CONNECTORS FOR UNMANNED AUTONOMOUS VEHICLES (UAV)

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# Wildcat Connectors for Unmanned Autonomous Vehicles (UAV)









### Consistently Leading the Way in Research, Development, Innovation, Reliability & Service

TE Connectivity (TE) with its Wildcat UAV connection systems offers expertise in the design and manufacture of interconnection solutions for harsh environments. With over 40-years of international experience, Wildcat UAV connectors are designed for applications within the aerospace, defense, transportation markets. With a new black zinc nickel plating, these connectors are suitable for UAV systems.

### Wildcat Connectors for Unmanned Autonomous Vehicles (UAV)



TE Connectivity (TE) with its Wildcat UAV connectors continues to push the boundaries of technology and innovation, consistently driving the market forwards with new products that match the ever increasing demands of lower weight, smaller size and better performance. All Wildcat UAV connectors are thermal cycle tested and environmentally sealed to IP67 when mated\*. All Wildcat UAV connectors also offer:

• Scoop-proof interface

• Shell-to-shell grounding

• Positive locking coupling

• No need for backshells or

• In-line and two hole mounting

styles (not UAV Composite)

• Surface finishing options

(not UAV Composite)

mechanism

boot termination

• Keyway options.

- Compact design/minimum space envelope
- Interfacial & wire sealing
- Boot termination feature
- PCB option
- Universal option available (not UAV Composite)
- Standard crimp tooling
- Suitable for blind mating
- Visual indication of keyway orientation of connector
- MATERIALS

Shell / coupling ring: High strength aluminum alloy with a conductive black zinc nickel finish\*

Contacts: Gold plated crimp contacts\*\*

**Insulators:** Thermoplastic

Interface / wire seals: Fluorinated silicone.

RoHS and REACH compliant

\*Except hermetic and UAVC connectors \*\*Except hermetic connectors

#### VIBRATION

All connectors aimed at autonomous solutions undergo three rigorous in-house tests for vibration and all exceed the following: Dynamic test - random on random 60g RMS in 3 axis. Endurance test - random 57g RMS in 2 axis for 8 hours each axis. Sinusoidal resonance to over 75g.

#### FLUID RESISTANCE

All connectors aimed at autonomous solutions show no damage when exposed to fuels, oils, and cleaning fluids regularly used in this harsh environment.

\* 1 meter for 30 minutes minimum

### **Product Overview**





The Wildcat UAV Micro Ultra<sup>LITE</sup> HE connectors offer a small and lightweight connector for 3 and 5 wires. The Wildcat UAV Micro Ultra<sup>LITE</sup> HE connectors are a solution where space and weight are restricted. Refer to page 16 for technical specifications.

### Wildcat UAV Micro Xtra<sup>LITE</sup> HE (UAV) Series Connectors

The UAV Micro Xtra<sup>LITE</sup> HE connectors offer one of the smallest. lightest packages for three, four, five and six wires. The UAV Micro Xtra<sup>LITE</sup> HE 6-way is the shortest, lightest UAV connector for six wires, offering a solution where space is at its most restrictive. Refer to pages 8, 10, 12, 14, and 16 for technical specifications.

### Wildcat UAV Ultra<sup>LITE</sup> HE and Wildcat UAV Micro Ultra<sup>LITE</sup> HE (UAVU) Series Connectors

### **Product Overview**

## **Product Overview (continued)**



### Wildcat UAV Micro<sup>LITE</sup> HE (UAVL) Series Connectors

The Micro<sup>LITE</sup> HE range is lighter and smaller than the original Wildcat UAV Micro HE connector, while still retaining all critical features such as vibration, temperature, and chemical resistance. Refer to page 18 for technical specifications.







### Wildcat UAV Mini Series Connectors

The Wildcat UAV Mini Series connector bridges the gap between the existing standard Wildcat UAV Series (Size 8) and the Wildcat UAV Micro range (Size 6), offering 6-way and 3-way connectors in three shell styles. Refer to page 20 for technical specifications.



A range of power connectors designed specifically for high current applications. The Wildcat UAV Heavy Duty connectors are ideally suited to high power battery and motor applications. Specially designed low insertion / extraction force contacts help ensure maximum performance in extreme conditions. Refer to page 30 for technical specifications.





### Wildcat UAV Double Density (UAVDD) Series Connectors

Next generation connector technology which brings together high density and high performance, inline with using wire size down to AWG 30. The Wildcat UAV Double Density range allows almost double the number of contacts to be packaged in the same shell as compared to the standard Wildcat UAV Series connectors. Refer to page 22 for technical specifications.

**Related Products** 



Connectors

### Wildcat UAV Standard Series Connectors

Developed by TE's engineers from the MIL-C-38999 Series 1.5 (Eurofighter connector), the Wildcat UAV Series connector was the first range of high specification connectors designed for the autonomous market. TE Wildcat UAV Series connector offers weight and space saving over standard military designs and is available a wide variety of options, with medium and high density arrangements up to 128 ways with four shell styles, and five keyway orientations. Refer to page 24 for technical specifications.

### Wildcat UAV Heavy Duty (UAVHD) Series Connectors

# Wildcat UAV Micro HE Hermetic Series

• Filtered Hermetic option also available

• Stainless Steel (316) for ease of mounting and corrosion performance • Titanium versions for light weight applications also available • Glass seal can withstand pressure differentials of 1000 psi without loss of electrical performance or fluid leakage

Refer to page 33 for additional information on related products.

## Wildcat UAV Size 1 Micro Xtra<sup>LITE</sup> HE 4 Way Connector

#### Ultra compact design (size 01 shell)

- Minimum space envelope
- 4 contacts Size #24
- PCB option
- Smaller and lighter than Wildcat UAV Ultra<sup>LITE</sup> (UAVU) series connectors

### **Easy installation**

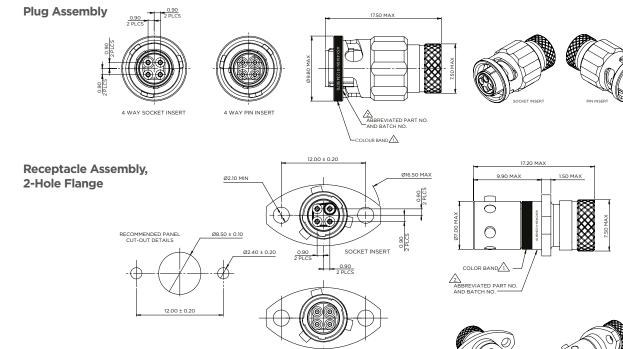
- Positive locking coupling mechanism
- Suitable for blind mating

#### • Scoop proof interface

• Boot termination feature

#### Built to withstand harsh environments

- Conductive black zinc nickel finish
- Interfacial wire sealing
- Bonded and sealed insert to help prevent moisture ingress



SOCKET INSERT

0 0

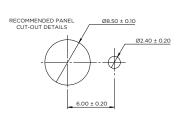
COLOR BAND 1.

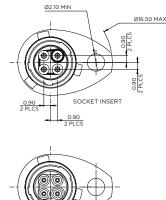
SOCKET INSERT

9.90 MA)

17.20 MAX

Receptacle Assembly, Half Flange





PIN INSERT



AEROSPACE, DEFENSE & MARINE / WILDCAT CONNECTORS FOR UNMANNED AUTONOMOUS VEHICLES (UAV)

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PIN INSERT

PIN INSER

1.50 MAX

# Wildcat UAV Size 1 Micro XtraLITE HE 4 Way Connector

#### GENERAL SPECIFICATION

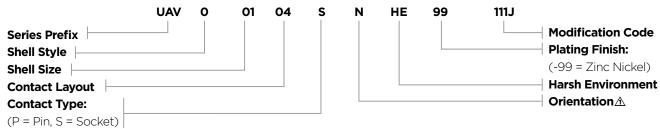
No. of Contact Ways Size	Shell Size	Max. Current (Amps)	Durability (cycles of engagement	Dielectric Withstanding Voltage (VAC)	No. of Keyway Orientations	Wire Sealing (mm)		Temperature (°C)*		
		(	& disengagement)			Min.	Max.	Min.	Max.	
4	24	01	3	500	1000	6	0.56	1.02	-55	+170

\* The upper limit is the maximum internal hot-spot temperature resulting from the combination of the ambient temperature and heating due to current. Contact Technical Support for more detail of specific products to meet your sealed electrical connection requirements.

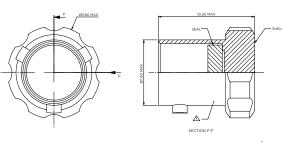
#### **CONTACTS & TOOLING PART NUMBERS**

Contact Size	Socket	Pin	PCB Socket	PCB Pin	Filler Plug	Ins/Ext Tool	Crimp Tool	Socket Positioner	Pin Positioner
24	612879-99	612876-99	611292	611661	600300-24	605837	M22520/2-01	605840	605839

#### ORDERING INFORMATION



#### Pro Cap 4 Way Plug

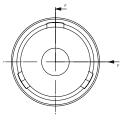


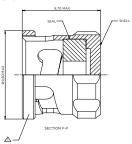
#### ACCESSORIES PART NUMBERS

Part N			
Nut Plate	Gasket		
ATM396-1	GV-1	Raychem	

Pro Cap 4 Way Receptacle







Boot Information						
Straight	90 degree					
203W301-25-G02	223W601					

Pro Cap							
Socket	Pin						
611292	611661						

## Wildcat UAV Micro Xtra<sup>LITE</sup> HE 3 Way Connector



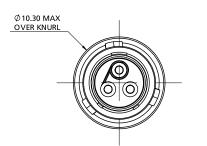
- Minimum space envelope
- 3 contacts Size #22
- PCB option
- Smaller and lighter than Wildcat UAV Ultra<sup>LITE</sup> (UAVU) series connectors

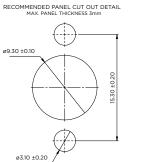
#### Easy installation

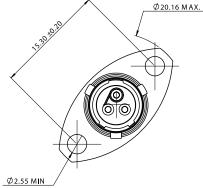
- Positive locking coupling mechanism
- Suitable for blind mating
- Scoop proof interface
- Boot termination feature

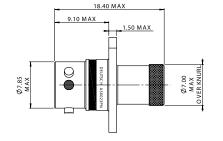
#### **Built to withstand harsh environments**

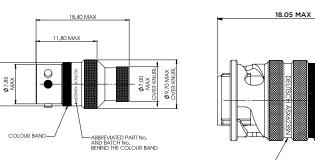
- Conductive black zinc nickel finish
- Interfacial wire sealing
- Bonded and sealed insert to help prevent moisture ingress













# Wildcat UAV Micro XtraLITE HE 3 Way Connector (continued)

#### GENERAL SPECIFICATION

No. of Contact Ways Size		Shell Size	Max. Current (Amps)	Durability (cycles of engagement	Dielectric Withstanding Voltage (VAC)	No. of Keyway Orientations	Wire Sealing (mm)		Temperature (°C)*	
	0120	SIZC		& disengagement)			Min.	Max.	Min.	Max.
3	22	02	5	500	1500	6	0.76	1.37	-55	+170

\* The upper limit is the maximum internal hot-spot temperature resulting from the combination of the ambient temperature and heating due to current. Contact Technical Support for more detail of specific products to meet your sealed electrical connection requirements.

#### **CONTACTS & TOOLING PART NUMBERS**

Contact Size	Socket	Pin	PCB Socket	PCB Pin	Filler Plug	Ins/Ext Tool	Crimp Tool	Socket Positioner	Pin Positioner
22	604984	604946-31	611282	611254-31	600300-22	M81969/14-01	M22520/2-01	605464	605463

#### **ORDERING INFORMATION**

Range Ref	
<b>Style:</b> O = 2 Hole Flange Receptacle	
1 = Inline Receptacle 2 = 2 Hole Flange Receptacle with PCB contacts 6 = Free Plug	
Shell Size	
Contact Arrangement:	
O3   Insert Type: P = Pin S = Socket	
Shell Keyways:N = Red (standard)A = YellowB = BlueC = OrangeD = GreenE = GreyU = Violet	
(U = Universal for test harnesses - Plug type 6 only)	
HE: Harsh Environment	
Modification Code	

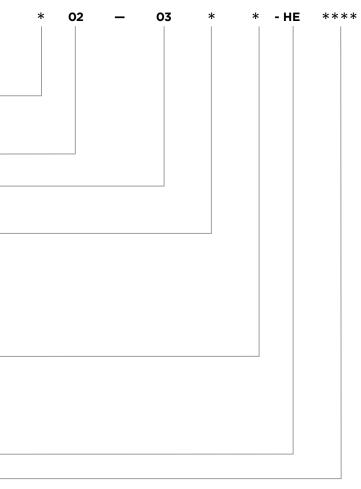
#### ACCESSORIES PART NUMBERS

Part Number			Boot Info	Boot Information			Cap	
Nut Plate	Gasket			Straight	90 degree		Receptacle	Plug
ATM396-2	GV-2		Raychem	203W301-25-G02	223W601		611545	611546

#### All dimensions are in mm unless otherwise stated.

-COLOUR BAND





## Wildcat UAV Micro Xtra<sup>LITE</sup> HE 5 Way Connector



#### Ultra compact design (size 02 shell)

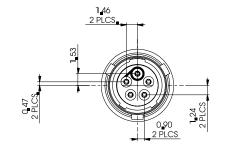
- Minimum space envelope
- 5 contacts Size #24
- PCB option
- Smaller and lighter than Wildcat UAV Ultra<sup>LITE</sup> (UAVU) series connectors

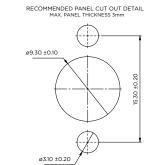
#### **Easy installation**

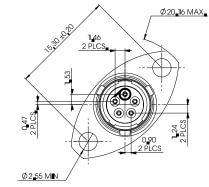
- Positive locking coupling mechanism
- Suitable for blind mating
- Scoop proof interface
- Boot termination feature

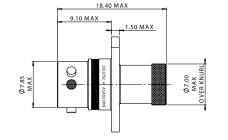
#### **Built to withstand harsh environments**

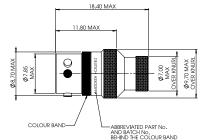
- Conductive black zinc nickel finish
- Interfacial wire sealing
- Bonded and sealed insert to help prevent moisture ingress

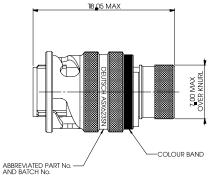












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#### All dimensions are in mm unless otherwise stated.

### GENERAL SPECIFICATION

No. of Contact Ways Size		Shell Size	Max. Current (Amps)	Durability (cycles of engagement	Dielectric Withstanding	No. of Keyway Orientations	Wire Sealing (mm)		Temperature (°C)*	
	JILC	(//////////////////////////////////////	& disengagement)	Voltage (VAC)	onentations	Min.	Max.	Min.	Max.	
5	24	02	3	500	1000	6	0.56	1.02	-55	+170

\* The upper limit is the maximum internal hot-spot temperature resulting from the combination of the ambient temperature and heating due to current. Contact Technical Support for more detail of specific products to meet your sealed electrical connection requirements.

#### CONTACTS & TOOLING PART NUMBERS

Contact Size	Socket	Pin	PCB Socket	PCB Pin	Filler Plug	Ins/Ext Tool	Crimp Tool	Socket Positioner	Pin Positioner
24	605704	605705-31	611292	611661-31	600300-24	605837	M22520/2-01	605840	605839

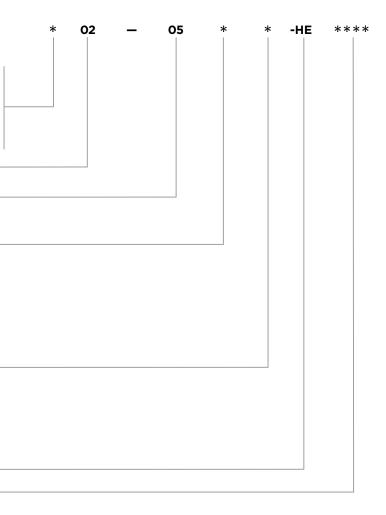
#### ORDERING INFORMATION

UAV
Range Ref
<b>Style:</b> 0 = 2 Hole Flange Receptacle 1 = Inline Receptacle
2 = 2 Hole Flange Receptacle with PCB contacts 6 = Free Plug
Shell Size
O5
Insert Type:   P = Pin   S = Socket
Shell Keyways:N = Red (standard)A = YellowB = BlueC = OrangeD = GreenE = GreyU = Violet
(U = Universal for test harnesses- Plug type 6 only)
HE: Harsh Environment
Modification Code

#### ACCESSORIES PART NUMBERS

Part Number				Boot Infe	ormation	Pro	Cap
Nut Plate	Gasket			Straight	90 degree	Receptacle	Plug
ATM396-2	GV-2		Raychem	203W301-25-G02	223W601	611545	611546

# Wildcat UAV Micro XtraLITE HE 5 Way Connector (continued)



# Wildcat UAV Micro Xtra<sup>LITE</sup> HE 6 Way Connector







#### Ultra compact design (size 02 shell)

- Minimum space envelope
- 6 contacts Size #24
- PCB option
- Smaller and lighter than Wildcat UAV Ultra<sup>LITE</sup> (UAVU) series connectors

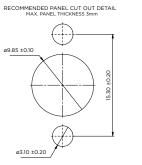
#### **Easy installation**

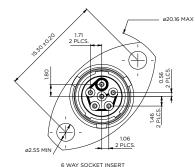
- Positive locking coupling mechanism
- Suitable for blind mating
- Scoop proof interface
- Boot termination feature

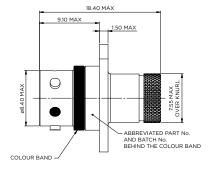
#### Built to withstand harsh environments

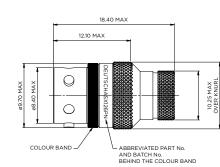
- Conductive black zinc nickel finish
- Interfacial wire sealing
- Gold-plated crimp contacts
- Bonded and sealed insert to help prevent moisture ingress

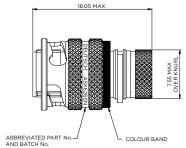












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## **GENERAL SPECIFICATION**

	Contact Size	Shell Size	Max. Current	Durability (cycles of engagement	Dielectric Withstanding	No. of Keyway Orientations	Wire Sealing (mm)		Temperature (°C)*	
	0120	0120	(Amps)	& disengagement)	Voltage (VAC)**	orrentations	Min.	Max.	Min.	Max.
6	24	02	3	500	1000	6	0.56	1.02	-55	+170

\* The upper limit is the maximum internal hot-spot temperature resulting from the combination of the ambient temperature and heating due to current. \*\* Current leakage less than 2 milliAmps at (VAC)

#### **CONTACTS & TOOLING PART NUMBERS**

Contact Size	Socket	Pin	PCB Socket	PCB Pin	Filler Plug	Ins/Ext Tool	Crimp Tool	Socket Positioner	Pin Positioner
24	605704	605705-31	611292	611661-31	600300-24	605837	M22520/2-01	605840	605839

#### **ORDERING INFORMATION**

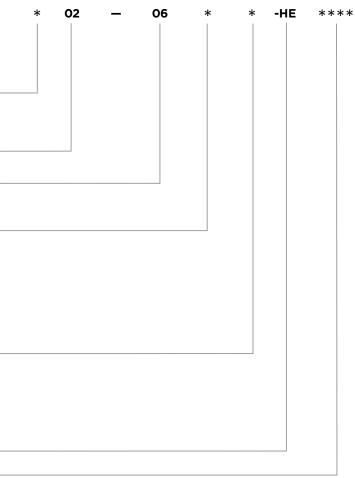
		UAV
Range Ref 🛛 🗕		
	nge Receptacle	
1 = Inline Recer 2 = 2 Hole Flan 6 = Free Plug		vith PCB contacts
Shell Size		
<b>Contact Arran</b> 06	gement:	
Insert Type: P = Pin S = Socket		
Shell Keyways N = Red (stand A = Yellow B = Blue C = Orange D = Green E = Grey U = Violet (U = Universal Plug type HE: Harsh Env	dard) for test harnesse 6 only)	

**Modification Code** 

#### ACCESSORIES PART NUMBERS

Part Nu		Boot Infe	ormation	Pro	Cap	
Nut Plate	Gasket		Straight	90 degree	Receptacle	Plug
ATM396-2	GV-2	Raychem	203W301-25-G02	223W601	611636	611637

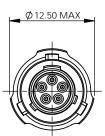
# Wildcat UAV Micro Xtra<sup>LITE</sup> HE 6 Way Connector (continued)

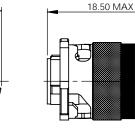


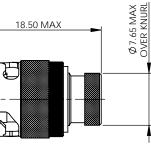
### Wildcat UAV UltraLITE HE & Wildcat UAV Micro UltraLITE HE (UAVU) Series Connectors



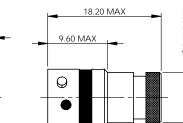
### PLUG - TYPE 6







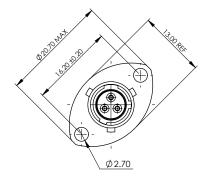
10 MAX



Ø3.10 ±0.20

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#### **RECEPTACLE - TYPE 0**



### 10.55 MAX 1.45 MAX 0 • Ø11.00 ±0.10

#### All dimensions are in mm unless otherwise stated.

18.20 MAX

#### **TE Wildcat UAV designed product**

- Smaller alternative to UAVL range
- Cable accommodation 24-30 AWG (5 way), 22-28 AWG (3 way)
- 17% smaller coupling ring than UAVL
- 30% lighter than UAVL (mated pair)

#### 2 different contact options

- 5x AWG 24 contacts
- 3x AWG 22 contacts

#### Built to withstand harsh environments

- Conductive black zinc nickel finish
- Interfacial wire sealing
- Bonded and sealed insert to help prevent moisture ingress

#### **INLINE RECEPTACLE - TYPE 1**



PANEL CUT-OUT DETAIL

# Wildcat UAV UltraLITE HE & Wildcat UAV Micro UltraLITE HE (UAVU) Series Connectors (continued)

#### **GENERAL SPECIFICATION**

No. of Ways	No. of Contact Ways Size	Shell Size	Max. Current (Amps)	Durability (cycles of engagement	Dielectric Withstanding	No. of Keyway Orientations		Gealing Im)	Temperature (°C)*	
VVdy5 512C	0120	(11165)	& disengagement)	Voltage (VAC)**	onentations	Min.	Max.	Min.	Max.	
3	22	03	5	500	1500	6	0.76	1.37	55	+170
5	24	03	3	500	1000	0	0.56	1.02	-22	±1/0

\* The upper limit is the maximum internal hot-spot temperature resulting from the combination of the ambient temperature and heating due to current. \*\* Current leakage less than 2 milliAmps at (VAC)

#### **CONTACTS & TOOLING PART NUMBERS**

Contact Size	Socket	Pin	PCB Socket	PCB Pin	Filler Plug	Ins/Ext Tool	Crimp Tool	Socket Positioner	Pin Positioner
22	604984	604946-31	605681	605679-31	600300-22	M81969/14-01	M22520/2-01	605464	605463
24	605704	605705-31	605902	605900-31	600300-24	605837	1122320/2-01	605840	605839

#### **ORDERING INFORMATION**



Range Ref

#### Style:

0 = 2 Hole Flange Receptacle 1 = Inline Receptacle 2 = 2 Hole Flange Receptacle with PCB contacts 6 = Free Plug

Shell Size

#### **Contact Arrangement:**

03, 05

#### Insert Type:

P = Pin

S = Socket

#### Shell Keyways:

N = Red (standard)

- A = Yellow
- B = Blue
- C = Orange

D = Green

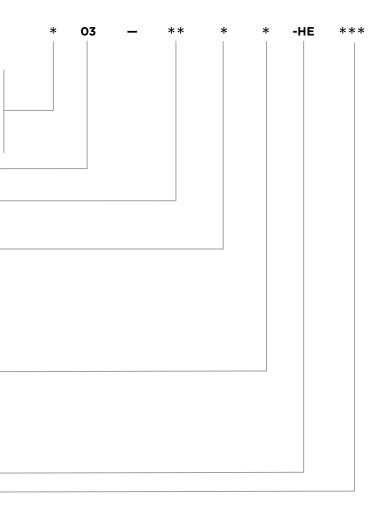
- E = Grey
- U = Violet
- U = (U = Universal for test harnesses-Plug type 6 only)

#### HE: Harsh Environment

#### Modification Code

#### ACCESSORIES PART NUMBERS

Pro Cap		Nut Plate	Gasket			Boot Info	ormation
Receptacle	Plug	Nutriate	Udsket			Straight	90 degree
605684	605687	ATM396-4	GV-3	]	Raychem	204W221-25-G03	224W221-25-G03



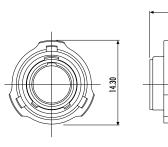
## Wildcat UAV Micro<sup>LITE</sup> HE (UAVL) Series Connectors



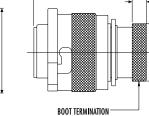




#### PLUG - TYPE 6

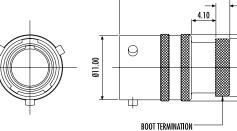


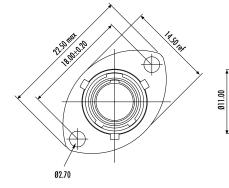
**RECEPTACLE - TYPE 0** 

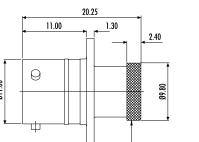


19.20

2.40







#### All dimensions are in mm unless otherwise stated.

BOOT TERMINATION

#### **Compact design (size 06 shell)**

- Designed for sensor applications
- 5 contacts Size #23
- PCB option

#### Easy installation

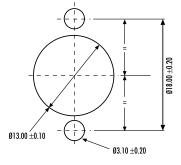
- Positive locking coupling mechanism
- Suitable for blind mating
- Scoop proof interface
- Boot termination feature

#### Built to withstand harsh environments

- Conductive black zinc nickel finish
- Interfacial wire sealing
- Bonded and sealed insert to help prevent moisture ingress

#### **INLINE RECEPTACLE - TYPE 1**

### PANEL CUT-OUT DETAIL



PAGE 18

# Wildcat UAV MicroLITE HE (UAVL) Series Connectors (continued)

#### GENERAL SPECIFICATION

No. of Contact Ways Size		Shell Size	Max. Current (Amps)	Durability (cycles of engagement	Dielectric Withstanding	No. of Keyway Orientations	Wire Sealing (mm)		Temperature (°C)*	
	SILC	(//////////////////////////////////////	& disengagement)	Voltage (VAC)**	onentations	Min.	Max.	Min.	Max.	
5	23	06	3	500	1000	6	0.60	1.37	-55	+170

\* The upper limit is the maximum internal hot-spot temperature resulting from the combination of the ambient temperature and heating due to current. \*\* Current leakage less than 2 milliAmps at (VAC)

#### CONTACTS & TOOLING PART NUMBERS

Contact Size	Socket	Pin	PCB Socket	PCB Pin	Filler Plug	Ins/Ext Tool	Crimp Tool	Socket Positioner	Pin Positioner
23	604935	604927-31	604992-HE	604990-31	600300-22	M81969/14-01	M22520/2-01	604973	604972

#### ORDERING INFORMATION

#### UAVL

#### Range Ref

#### Style:

0 = 2-hole flange receptacle

### 1 = Inline receptacle

2 = 2-hole flange receptacle with PCB contacts

6 = Free plug

#### Shell Size

#### **Contact Arrangement**

#### Insert Type: P = Pin

S = Socket

#### Shell Keyways:

N = Red (standard)	
A = Yellow	
B = Blue	
C = Orange	
D = Green	
E = Grey	

U = Violet

U = (U = Universal for test harnesses-Plug type 6 only)

#### Harsh Environment

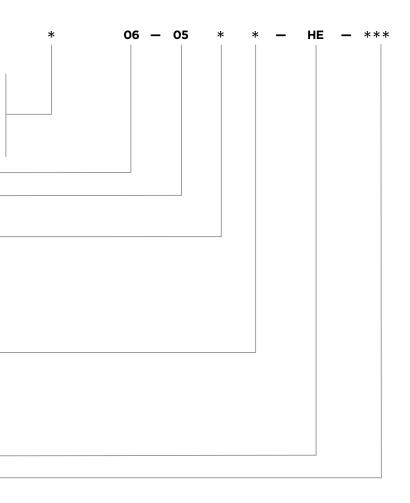
Modification Code

#### ACCESSORIES PART NUMBERS

Pro	Cap	Nut Plate	Gasket		Boot Information			
Receptacle	Plug				Straight	90 degree		
604029	604027	ATM396-6	GV-6	Raychem	204W221	224W221		

1875

2.40

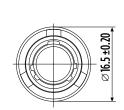


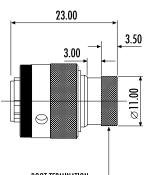
### Wildcat UAV Mini Series Connectors

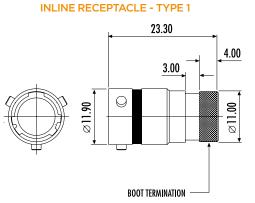


- Size 07 shell Smaller option to MIL-DTL-38999 spec size 08 shell
- 2 planform options 3 or 6 contact options
- Integral screen termination Ideal for braided cable installations
- Cable accommodation 20, 22, 24 and 26 AWG
- Offers size 8 insert arrangement in smaller shell
- Conductive black zinc nickel finish

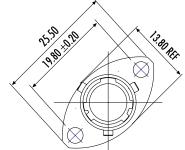
#### PLUG - TYPE 6

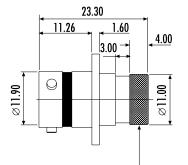






#### **RECEPTACLE - TYPE 0**





BOOT TERMINATION





# Wildcat UAV Mini Series Connectors (continued)

#### **GENERAL SPECIFICATION**

No. of Ways	Ways tact Size		Max. Current (Amps)	Durability (cycles of engagement	Dielectric Withstanding	nding No. of Keyway		Wire Sealing (mm)		Temperature (°C)*	
Size		0120	(11100)	& disengagement)	Voltage (VAC)**	onentations	Min.	Max.	Min.	Max.	
6	22	07	5	500	1500	7	0.76	1.37	-55	+170	
3	20	07	7.5	500	1800	J	1.02	2.11	-))	+1/0	

\* The upper limit is the maximum internal hot-spot temperature resulting from the combination of the ambient temperature and heating due to current. \*\* Current leakage less than 2 milliAmps at (VAC)

#### **CONTACTS & TOOLING PART NUMBERS**

Contact Size	Socket	Pin	Filler Plug	Ins/Ext Tool	Crimp Tool	Socket Positioner	Pin Positioner
22	604887	38941-22	600300-22	M81969/14-01	M22520/2-01	605000	M22520/2-09
20	6862-201-20278	38941-20	600300-20	M81969/14-10	1122320/2-01	M22520/2-10	M22520/2-10

#### **ORDERING INFORMATION**

	UAV
Range Ref	
Style: O = 2-hole Receptacle 1 = 1 Inline Receptacle 6 = Free plug	
Shell Size	
Contact Arrangement:	
Insert Type: P = Pin S = Socket	
Shell Keyways: N = Red (standard) A = Yellow	
B = Blue	
HE: Harsh Environment	
Modification Code	

#### ACCESSORIES PART NUMBERS

Pro	Pro Cap		Gasket		Boot Info	ormation
Receptacle	Plug				Straight	90 degree
AS907	AS807	ATM396-7	GV-7	Raychem	202K121	222K121

All dimensions are in mm unless otherwise stated.

07-98

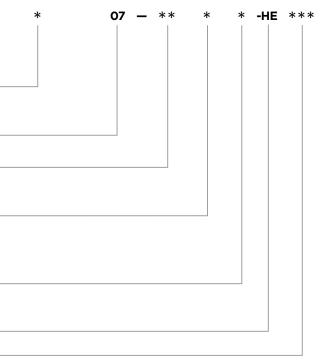
Size 7 3#20

07-35

Size 7 6#22

INSERT ARRANGEMENTS

BOOT TERMINATION

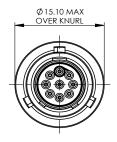


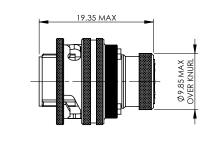
### Wildcat UAV Double Density (UAVDD) Series Connectors



9-way connector dimensions - For other dimensions, refer to pages 8 to 13

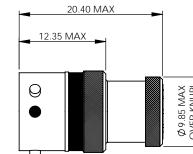
#### PLUG - TYPE 6



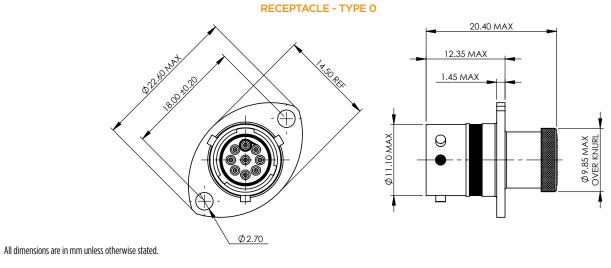




**INLINE RECEPTACLE - TYPE 1** 



PAGE 22



#### Next generation connector – high density and high performance 8 shell sizes

- Allows for a saving of 2 shell sizes relative to standard planforms
- Very lightweight
- Almost double the number of contacts compared with the standard range equivalent shell size
- Integral screen

# Built to withstand harsh environments

- Conductive black zinc nickel finish
- Interfacial wire sealing
- Bonded and sealed insert to help prevent moisture ingress

#### ORDERING INFORMATION

#### 0 = 2-hole flange receptacle

- 1 = Inline receptacle
- 2 = 2 hole flange receptacle with PCB contacts
- 4 = Flangeless
- 6 = Free plug

### Shell Size:

06, 07, 08, 10, 12, 14, 16, 18

#### **Contact Arrangement:**

09, 11, 23, 41, 64, 93, 118

#### Insert Type:

P = Pin	
S = Socket	

#### Shell Keyways:

- N = Red (standard)
- A = Yellow
- D = Green
- B = Blue
- C = Orange
- E = Grey
- U = Violet

#### Modification Code

Please note: 08-11 is only available in keyways N, A and D, and 06-09 is available in all keyways. 07-11 is only available in keyways N, A and B.

GENER	GENERAL SPECIFICATION											
Connector	Contact			Durability (cycles of engagement		No. of Keyway	Wire Sealing (mm)		Temperature (°C )*			
connector	Size	Size	(Amps)	& disengagement)	Voltage (VAC)**	Orientations	Min.	Max.	Min.	Max.		
06-09		06				6						
07-11		07				3						
08-11		08				3						
10-23	24	10	z	500	750		0.56	1.02	-55	+170		
12-41	24	12		500	100		0.00	1.02	-))	+1/0		
14-64		14				6						
16-93		16										
18-118		18										

\* The upper limit is the maximum internal hot-spot temperature resulting from the combination of the ambient temperature and heating due to current. \*\* Current leakage less than 2 milliAmps at (VAC)

UAVDD

#### **CONTACTS & TOOLING PART NUMBERS**

Connector	Socket	Pin	PCB Socket	PCB Pin	Ins/Ext Tool	Socket Positioner	Pin Positioner
06-09	605704	605705-31	610008	610006-31		605840	605839
07-11	612532	605719-31	612715-ZZ	612714-31		M22520/2-09	605839
08-11							
10-23			DCR versions	are ordered	605837	610287	
12-41	605721	605719-31	with AS2 pref				610286
14-64	005721	00010 01		ontacts.		010207	010200
16-93			WITH C	macus.			
18-118							

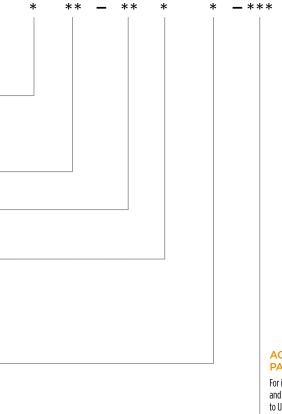


Range Ref

Style:

(continued)

## Wildcat UAV Double Density (UAVDD) Series Connectors



#### ACCESSORIES PART NUMBERS

For information on boots and nut plates please refer to UAV series on pages 22 to 27 or contact TE Technical Support for further information.

### Wildcat UAV Standard Series Connectors



#### **GENERAL SPECIFICATION**

#### Large application choices

- Filter, hermetic & fiber optic options available Shell sizes 08 - 24
- Intermateable with existing LN29729 (Mil-C 38999 Series 1.5) and Pan 6433-2 style connectors
- High density arrangements

#### Built to withstand harsh environments

- Conductive black zinc nickel finish
- Interfacial wire sealing
- Bonded and sealed insert to help prevent moisture ingress

	Contact	Shell	Max. Current			Wire Seal	ing (mm)	, , , , , , , , , , , , , , , , , , ,	
	Size	Size	(Amps)	& disengagement)	Orientations	Min.	Max.	Min.	Max.
[	22	08 to 24	5		c	0.76	1.37		
	20		7.5	500	only 3 for shell size 8	1.02	2.11	-55	+175
ĺ	16	see below	20			1.65	2.77		

\*The upper limit is the maximum internal hot-spot temperature resulting from the combination of the ambient temperature and heating due to current.

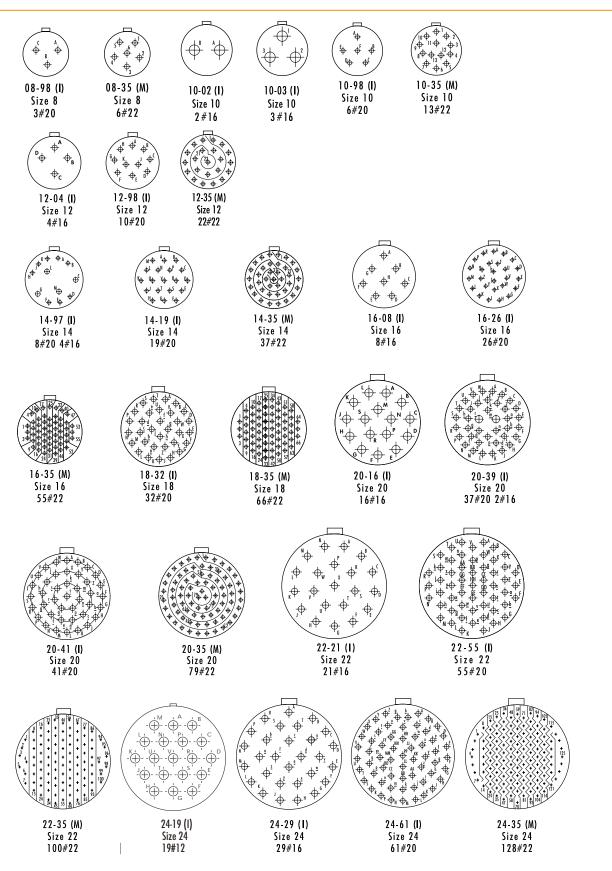
Shell	Contact	Nu	mber of Conta	cts	Dating **		Shell	Contact	Num	ber of Cont	tacts		Dating **
Size	Arrangement	Size 22 D	Size 20	Size 16	Rating **		Size	Arrangement	Size 22 D	Size 20	Size 16	Size 12	Rating **
08	-98		3				18	-32		32			
08	-35	6			М		18	-35	66				М
10	-98		6				20	-16			16		
10	-35	13			М		20	-39		37	2		
10	-02			2			20	-41		41			
10	-03			3			20	-35	79				М
12	-04			4			22	-21			21		
12	-98		10				22	-55		55			
12	-35	22			М		22	-35	100				М
14	-97		8	4			24	-19				19	
14	-19		19				24	-29			29		
14	-35	37			М		24	-61		61			
16	-08			8			24	-35	128				М
16	-26		26			**[	Datinac N	1&I define Dielectric W	lithstand Vol	tago ratings	as follows:		
16	-35	55			М		-	volts rms, I = 1800 vol				lliAmps.	

Please note: The contact/insert arrangements shown above are standard layouts. Other combinations of shell sizes and insert arrangements may be available. For details contact the TE Technical Support.

#### **CONTACTS & TOOLING PART NUMBERS**

Contact Size	Socket	Pin	Filler Plug	Ins/Ext Tool	Crimp Tool	Socket Positioner	Pin Positioner
22	38943-22	38941-22	600300-22	M81969/14-01	M22520/2-01	M22520/2-07	M22520/2-09
20	38943-20	38941-20	600300-20	M81969/14-10	M22520/2-01	M22520/2-10	M22520/2-10
16	38943-16	38941-16	600300-16	M81969/14-03	M22520/1-01	M22520/1-04	M22520/1-04

Please note: PCB versions are ordered with UAV2 prefixes and come with contacts.

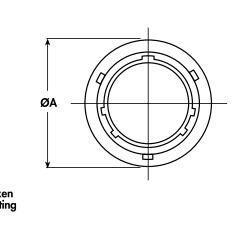


Ratings M&I define Dielectric Withstand Voltage ratings as follows: I = 1800 volts rms, M = 1300 volts rms, current leakage less than 2 milliamps.

## Wildcat UAV Standard Series Connectors

#### PLUG - TYPE 6

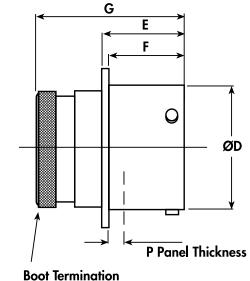
B C Length taken up on matting



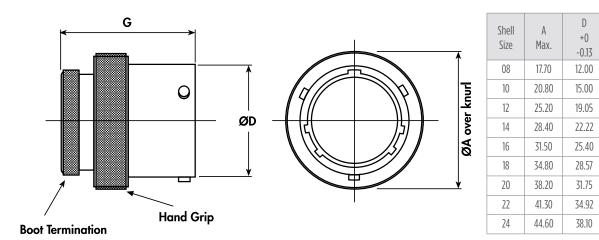
Shell Size	A Max.	B Max.	C Max.
08	17.70		
10	20.80		
12	25.20		
14	28.40		
16	31.50	33.50	15.00
18	34.80		
20	38.20		
22	41.30		
24	44.60		

## Wildcat UAV Standard Series Connectors

RECEPTACLE - TYPE 0

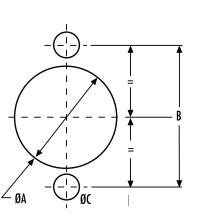


#### INLINE RECEPTACLE - TYPE 1



Shell Size	A REF	B ± 0.2	C + 0.1 - 0	D + 0 - 0.13	E + 0.15 - 0	F + 0 - 0.13	G Max.	L Max.	P Max.
08	16.50	21.35		12.00	17.21	16.05	33.50	27.20	3.00
10	19.50	25.90		15.00				32.00	
12	24.00	29.10		19.05				35.20	
14	27.00	32.50	7 20	22.22				38.40	
16	30.30	34.80	3.20	25.40				41.00	
18	33.70	38.20		28.57				44.70	
20	37.00	41.60		31.75				47.90	
22	40.00	44.95		34.92		15.29		51.10	
24	43.30	49.35	3.70	38.10				55.80	2.26

#### PANEL CUT-OUT DETAIL





All dimensions are in mm unless otherwise stated.

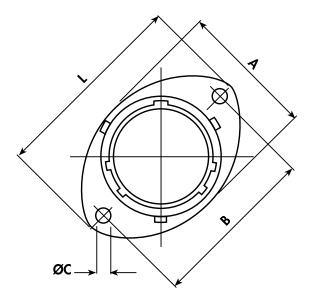


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G

Max.

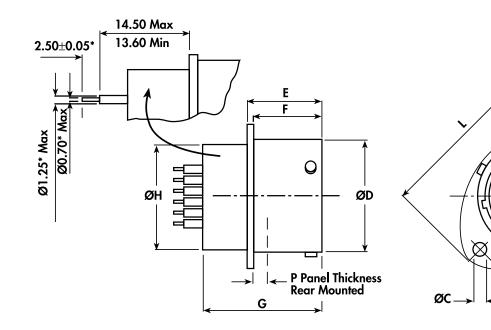
33.50



A ±0.10	B ±0.20	C ±0.20
±0.10	±0.20	±0.20
 17.40	25.90	
 21.90	29.10	
 25.00	32.50	7.6
28.20	34.80	3.6
31.40	38.20	
34.60	41.60	
37.80	44.90	
41.00	49.30	4.10

### Wildcat UAV Standard Series Connectors

#### PCB BOX MOUNTING RECEPTACLE - TYPE 2

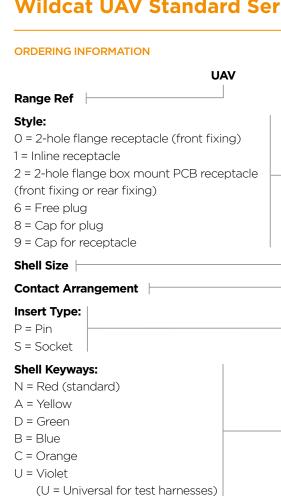


\*Dimensions for 20 and 22 contacts shown are for standard parts. Other PCB contacts are available.

Shell Size	A REF	B ± 0.2	C + 0.1 - 0	D + 0 - 0.13	E + 0.15 – 0	F + 0 - 0.13	G Max.	H Max.	L Max.	P Max.
08	16.50	21.40		12.00	17.21	16.05	27.65	11.10	27.20	
10	19.50	25.90		15.00				14.27	32.00	
12	24.00	29.10		19.05				17.44	35.20	
14	27.00	32.50		22.22				20.60	38.40	3.00
16	30.30	34.80	3.7	25.40				23.77	41.00	5.00
18	33.70	38.20		28.57				26.94	44.70	
20	37.00	41.60	-	31.75				30.11	47.90	
22	40.00	44.95		34.92		15.29		33.29	51.10	
24	43.30	49.35		38.10				36.46	55.80	2.26

 $\boxtimes$ 

### Wildcat UAV Standard Series Connectors



Modification Code

Shell Size

08

10

12

14

16

18

20

22

24

Please note: The size 8 shell is only available in keyways A, D and N.

#### ACCESSORIES PART NUMBERS

Nut Plate

ATM396 -8

ATM396 -10

ATM396 -12

ATM396 -14

ATM396 -16

ATM396 -18

ATM396 -20

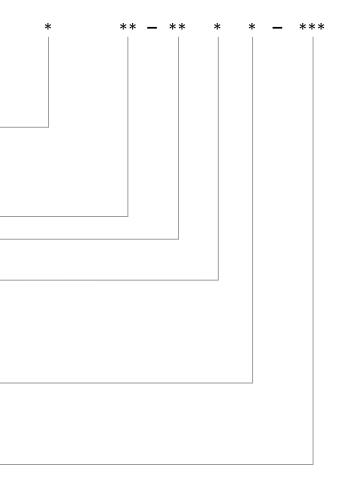
ATM396 -22

ATM396 -24

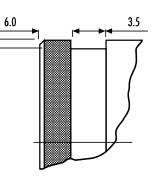
Gasket		
GV-08	1	
GV-10		
GV-12		Ø
GV-14		
GV-16	ØA Over	
GV-18	Knurl	1
GV-20		
GV-22	₹	
GV-24		

All dimensions are in mm unless otherwise stated.

All dimensions are in mm unless otherwise stated.



#### **BOOT TERMINATION DETAIL**



Shell Size	A ± 0.10	B ± 0.05
08	11.20	10.00
10	14.22	12.95
12	17.39	16.15
14	20.55	19.15
16	23.72	23.35
18	26.89	25.35
20	30.06	28.50
22	33.24	31.70
24	36.41	34.85

## Wildcat UAV Heavy Duty (UAVHD) Series Connectors





### Wildcat UAV design for high current applications

- Early break / Late mate on data contacts for safety
- Cable accommodation from 16mm<sup>2</sup> - 70mm<sup>2</sup>
- Positive locking coupling mechanism

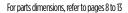
#### High performance materials

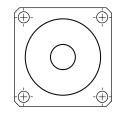
- Environmentally sealed
- Thermal cycle tested
- Heavy duty rated
- Crimp type solid and gold plated copper contacts
- Conductive black zinc nickel finish



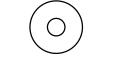


0









UAVHD14-1

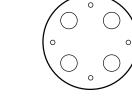
(1 x AWG 4 )





UAV 24-34220 (3 x AWG 4, 2 x AWG 20)

0



UAV 24-44420 (4 x AWG 4, 4 x AWG 20)

#### All dimensions are in mm unless otherwise stated.



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# Wildcat UAV Heavy Duty (UAVHD) Series Connectors (continued)

#### **CONTACTS & TOOLING PART NUMBERS**

Contact Size	Socket	Pin	Filler Plug		
20	38943-20	38941-20	600300-20		

#### Please note: PCB versions are ordered with UAVHD2 prefixes and come with contacts.

Wire Size	Split-Finger Socket	Hyperboloid Socket	Pin	Ext Tool	Crimp Tool	Jaws	Contact	Max. Current
16 mm	611103-016	605739	605734	C1017C		605774	20	7.5
25 mm	611103-025	605654	605660	610136- Tool	605773	605775	4	200
35 mm	611103-035	605740	605735			605776	0 **	300

\*For use with part numbers UAVHD022-24320SN-S04 and UAVHD622-24320PN-004

\*\* Super UAVHD only Application Note: Due to potential high current, we would recommend that the product be suitably insulated with the appropriate materials.

#### **ORDERING INFORMATION**

	UAVHD *
Range Ref	
Style:	1
0	
1	
2 (UAVHD size 14 only)	
6	
Shell Size:	I
14 = UAVHD	
22 = UAVHD 2-Way and	SuperUAVHD
24 = UAVHD 3 and 4-W	ay
Contact Arrangement:	I
1 = (UAVHD)	
0.4700 (-: 00)	

1 = (UAVHD)	
24320 = (size 22)	
34220 = (size 24) 3-Way	
44420 = (size 24) 4-Way	
1 = (Super UAVHD)	

#### Insert Type:

P = Pin S = Socket

#### Shell Keyways:

N = Red (standard) A = Yellow B = Blue

C = Orange

- D =Green
- E = Grey

#### Harsh Environment:

Contact Size Code \*16 \*25

\*35

\*With Pin contacts, C for size 14 shell only / O for other sizes shell only / O for hyperloid contacts for other sizes / S for sp

#### **Modification Code**

Ins/Ext Tool Crimp Tool		Socket Positioner	Pin Positioner		
M81969/14-10	M22520/2-01	M22520/2-10	M22520/2-10		

*	_	*	*	*	_	***	_	****
es. With	Socket c	ontacts	s, <b>C</b> for h	nyperbo	oloid cc	ntacts fo	r size <sup>:</sup>	14
split fing	ier conta	cts.						

## **Other Related Products**













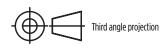


ØD MIN 45° Ø

RAD C MAX

Shell Size	А	ØB Max	Rad C Max	ØD Min
01	6.00	8.80	8.25	2.20
02 (UAV 3 & 5 Way)	7.65	10.08	10.08	2.55
02 (UAV 6 Way)	7.65	10.65	10.08	2.55
03 (UAVU 3 & 5 Way)	8.20	13.16	10.35	2.55
06 (UAVL & UAVDD 9 Way)	9.10	14.66	11.25	2.55
07	10.00	13.96	12.75	3.20
08	10.78	16.66	13.60	3.20
10	13.05	19.66	16.00	3.20
12	14.65	24.16	17.60	3.20

Unless otherwise stated, dimensions are in mm.











### Wildcat UAV Micro HE Hermetic Series Connectors

• Filtered Hermetic option also available

• Stainless Steel (316) for ease of mounting and corrosion performance • Titanium versions for light weight applications also available

• Glass seal can withstand pressure differentials of 1000 psi without loss of electrical performance or fluid leakage

### Wildcat UAV Micro Hermetic (Jam-Nut) Series Connectors

#### • Jam-nut fixing

• Enlarged backshell for easier contact soldering

• Fuel immersible specification O-ring for enhanced fluid resistance

• Glass seal can withstand pressure differentials of 1000 psi without loss of electrical performance or fluid leakage

• Fully intermateable with UAV Micro HE connector and Micro<sup>LITE</sup> connector

### Wildcat UAV Hermetic Fuel Tank Series Connectors

• Fuel tank applications

• Glass to metal hermetic sealing

• Fuel-immersible specification o-ring

• High standard of sealing between connector and bulkhead

### Wildcat UAV Co-ax Series

• Ultra compact and light weight design (size 3 shell) • Single co-axial contact and gold-plated crimp contacts • Positive locking coupling mechanism with 2 keyway orientations and boot termination feature • Designed for RG316 cable

# Clinchnut Wildcat UAV Series

• A replacement for nutplates • Available for PCB and flange mounted versions • Time-saving option • Available across the range of Wildcat UAV connectors

### Low Profile PCB Series

• Specifically designed for control box applications

• Only 3 mm length behind the flange

• Reduces unnecessary space within boxes

• Allows for space and weight saving of control boxes

#### Contact TE for related product information.

## **Other Related Products (continued)**

### How to Order



### Wildcat UAV3 Through Bulkhead Series

- Military proven design with scoop-proof interface
- Positive locking coupling mechanism; thermal cycle tested
- Environmentally sealed to IP67; gold plated crimp contacts
- Fully intermateable with Wildcat UAV range of products
- 4 hole mounting style



### Termination Boots and Accessories

#### Gaskets

- Designed specifically for Wildcat UAV flanged connectors
- Available from size 02 through to 24 shells
- Constructed from fluoroelastomer polymer
- Assist in sealing connectors to the mounting point



#### Nut Plates

- Available for all Wildcat UAV two-hole flange mounted connector receptacles
- Designed to simplify connector-to-bulkhead assembly
- Eliminate the need to position loose nuts and washers
- Anti-vibration and make assembly quicker and easier



#### **Braid Termination Systems**

Attaching braid to the back of a high performance connector can be done in a number of ways, depending on the environment the connector will be operating in. The standard practice of a metal strap on the braid to fasten it to the groove at the back of the shell is seen as a reliable solution with tooling and straps available from a number of sources.

TE's engineers would suggest TE Connectivity screened backshell options which can be found on-line at www.te.com/usa-en/product-CX6566-000.html.



### Style:

- 0 = 2-Hole Flange Receptacle
- 1 = Inline Receptacle
- 2 = 2-Hole Flange Receptacle with PCB Contacts

UAV

- 3 = Through Bulkhead
- 4 = Weld-Mounting / Flangeless
- 6 = Free Plug
- 7 = Jam-Nut Mounting
- 8 = Protective Cap for Plug
- 9 = Protective Cap for Receptacle

#### Shell Size |

#### **Contact Arrangement:**

#### Insert Type:

P = Pin

S = Socket

#### Shell Keyways:

N = Red (Standard)	
--------------------	--

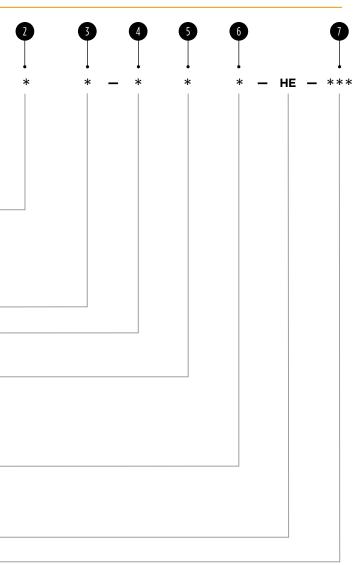
Modification Code
Harsh Environment
E = Grey
D = Green
C = Orange
B = Blue
A = Yellow

#### All Wildcat UAV part numbers work to the same principles. The part number is broken down into sections as follows:

- 1. 'UAV' indicates that this is a connector for Autonomous Systems. There 3. Relates to the required shell size. This will range from 02 (small) to may be another letter after UAV - this designates a particular series. For 24 (large). example UAVDD = Double Density. 4. Is the planform detail (number of contacts).
- 2. The next major element is the connector style.
- 0 = 2 hole flanged receptacle
- 1 = Inline receptacle
- 2 = 2 hole flanged receptacle with fixed PCB contacts
- 3 = Through bulkhead 4 = Weld mounting / flangeless
- 6 = Free plug
- 7 = Jam-nut mounting
- 8 = Protective cap for plug
- 9 = Protective cap for receptacle
- Please note: not all of these options are available on

all products; the relevant product pages will give you this information.

Contact TE for related product information.



- 5. Indicates the gender of a plug or receptacle. 'P' for pin or 'S' for socket.
- 6. Designates a keyway. Only connectors of the same keyway can mate. The options are: N, A, B, C, D, E or U for universal or no keyway option. The 'U' option should only be
- selected for test harnesses and not for racing applications.
- 7. After all these elements there may be a 4-character code, which designates a special modification. For instance this can be a special contact length or a non-standard plating finish. For more information on modification codes please visit te.com/support to chat with a Product Information Specialist.

## **Reference Guide**

**Contact Type** 

CONTACT SIZE	PART NO.	P/S	WIRE RANGE	COLOUR BAND	Max. CURRENT	CRIMP TOOL	POSITIONER		PLASTIC TOOLS INSERT/REMOVAL	
Size 24	605719-31	Р	- 24-30 None	Nene	7 Amme	mps M22520/2-01	610286	Р	605837	
UAVDD excluding 9-way	605721	S		3 Amps	MZZ5Z0/Z-01	610287	S	Orange/White		
Size 24	605705-31	Р	24-30	None	3 Amps	M22520/2-01	605839	Р	605837	
UAVDD 9 way, UAV 5/6, UAVU 5 way	605704	S	24-30	NOTE	2 ATTIPS	1122320/2-01	605840	S	Orange/White	
Size 24	605719-31	Р	24-30	None	7 Amor	M22520/2-01	605839	Р	605837	
UAVDD 7-11	612532	S	24-50	Notie	3 Amps	MZZ5Z0/Z-01	M22520/2-09	S	Orange/ White	
Size 23	604927-31	Р	22.20	Nono	3 Amps	M22520/2-01	604972	Р	M81969/14-01	
5126 25	604935	S		2 ATTPS	MZZ5Z0/Z-01	604973	S	Green/White		
Size 22	38941-22	P Orange, Blue, Bla	Orange, Blue, Black	EAmor	M22520/2_01	M22520/2-09	Р	M81969/14-01		
5126 22	38943-22	S	22-26	Orange, Yellow, Grey	5 Amps	M22520/2-01	M22520/2-07	S	Green/White	
Size 20	38941-20		20-24	Orange, Blue, Orange	7.5 Amps	M22520/2-01	M22520/2-10	Р	M81969/14-10 Red/Orange	
5126 20	38943-20	S	20-24	Orange, Green, Brown	7.5 AITIPS		M22520/2-10	S		
Size 16	38941-16 P Orange,	Orange, Blue, Yellow	20 Amps	M22520/1_01	M22520/1-04	Р	M81969/14-03			
5126 10	38943-16	S	16-20	Orange, Green, Red	ZU AITIPS	M22520/1-01	M22520/1-04	S	Blue/White	
Size 12	38941-12	Р	12-14	Orange, Blue, Green	27 Amps	M22520/1_01	M22520/1-04	Р	110000/14-04	
512612	38943-12	S	12-14	Orange, Green, Orange	Z5 ATTIPS	23 Amps M22520/1-01		S	M18969/14-04	
	38941-22	Р	22.20	Orange, Blue, Black	E Amon o	M22520/2 01	M22520/2-09	Р	M81969/14-01	
UAV Mini Size 22	604887	S	22-26	None	5 Amps	M22520/2-01	605000	S	Green/White	
	38941-20 P	20.24	Orange, Blue, Orange	75 Among	M22520/2 01	M22520/2-10	Р	M81969/14-10		
UAV Mini Size 20	6862-201-20278	S	20-24	None	7.5 Amps	M22520/2-01	M22520/2-10	S	Red/Orange	
Size 22	604946-31	Р				M22520/2	605463	Р	M81969/14-01	
UAV Composite/UAVU 3-Way, UAV 3-Way	604984	S	22-28	None	5 Amps	-01	605464	S	Green/White	

#### **Boot Information**

	STRAIGHT BOOT	90 DEGREE BOOT
SHELL SIZE	RAYCHEM	RAYCHEM
UAV (Size 02)	203W301-25-G02	223W601
UAVU (Size 03)	204W221-25-G03	224W221-25-G03
UAVC	204W221	224W221
UAVL	204W221	224W221
UAV Mini	202K121	222K121
08	202K121	222K121
10	202K132	222K132
12	202K142	222K142
14	202K142	222K142
16	202K153	222K152
18	202K153	222K152
20	202K163	222K163
22	202K163	222K163
24	202K174	222K174

#### **Filler Plugs**

CONTACT SIZE	PART NUMBER
24	600300-24
23	600300-22
22	600300-22
20	600300-20
16	600300-16
12	600300-12

# **Reference Guide (continued)**

### Accessories

SHELL SIZE	NUTPLATE	GASKET	PLUG/RECEPTACLE	PROTECTIVE CAP
$\Omega_{2}$ ( $\Pi_{1}\Lambda_{1}/2$ /E )		GV-2	Plug	611546
02 ( UAV 3/5 )	ATM396-2 M2	UV-Z	Receptacle	611545
02 ( UAV 6 only )	ATM396-2 M2	GV-2	Plug	611637
UZ ( UAV 0 UIIY )	ATPICE ATPIC	UV-Z	Receptacle	611636
03 (UAVU 3/5)	ATM396-4 M2	GV-3	Plug	605687
US (UAVU 5/ 5)	ATM390-4 MZ	C-VD	Receptacle	605684
06 (UAVL)	ATM396-6 M2.5	GV-6	Plug	604027
00 (0AVL)	ATT 0-060112.5	GV-0	Receptacle	604029
07 (Mini)	ATM396-7 M3	GV-7	Plug	603596-07-99
07 (191111)	ATT 7-06CITTA	07-7	Receptacle	603597-07-99
08	ATM396-8 M3	GV-8	Plug	603596-08-99
00	Ciri o-oecirita		Receptacle	603597-08-99
10	ATM396-10 M3	GV-10	Plug	603596-10-99
10			Receptacle	603597-10-99
12	ATM396-12 M3	GV-12	Plug	603596-12-99
IΖ	Ciri 2i-06CiritA	0V-1Z	Receptacle	603597-12-99
14	14 ATM396-14 M3	GV-14	Plug	603596-14-99
14	ATT 100014	01-14	Receptacle	603597-14-99
16	ATM396-16 M3	GV-16	Plug	603596-16-99
10	CIT 01-06CITIA	60-10	Receptacle	603597-16-99
18	ATM396-18 M3	GV-18	Plug	603596-18-99
10	CITI 01-06CITITA	01-10	Receptacle	603597-18-99
20	ATM396-20 M3	GV-20	Plug	603596-20-99
20	ATTI 20-20 CIT	GV-20	Receptacle	603597-20-99
22	ATM396-22 M3	GV-22	Plug	603596-22-99
LL	כויו 22-טלכויו או	UV-22	Receptacle	603597-22-99
24	ATM396-24 M3	GV-24	Plug	603596-24-99
24	ATRI230-24 MIS	UV-24	Receptacle	603597-24-99

#### Wire Sizes and Dimensions

SIZE		FINISHED WIRE DIMENSIONS				
		COND	UCTOR	INSULATION		
CONTACT SIZE	WIRE SIZE (AWG)	Min.	Max.	Min.	Max.	
24	30, 28, 26, 24	0.254 mm 0.010 in	0.511 mm 0.02 in	0.56 mm 0.22 in	1.02 mm 0.040 in	
23	28, 26, 24, 22	0.321 mm .012 in	0.790 mm .031 in	0.60 mm .023 in	1.37 mm .054 in	
22	26, 24, 22	0.405 mm .015 in	0.790 mm .031 in	0.76 mm .030 in	1.37 mm .054 in	
20	24, 22, 20	0.511 mm .02 in	0.970 mm .038 in	1.02 mm .040 in	2.11 mm .083 in	
16	20, 18, 16	0.812 mm .031 in	1.530 mm .060 in	1.65 mm .065 in	2.77 mm .109 in	
12	14, 12	1.62 mm (0.064 in)	2.05 mm (0.08 in)	2.46 mm (0.097 in)	3.61 mm (0.142 in)	

#### Torque (In-Lbs)

THREAD SIZE	MIN	MAX
M2	0.18	1.77
M2.5	0.23	3.8
M3	0.5	5

### **Wire Preparation**

### **Contact Insertion**



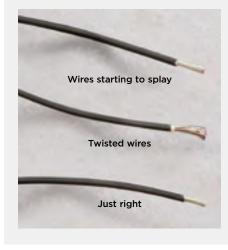
Not the best way to strip insulation. Pliers may remove the insulation, but are also likely to break and remove strands of the wire too.



Wire stripping with a recommended tool will allow the insulation to be removed accurately without damaging the wires.

When the insulation has been removed NEVER twist the strands of wire. Doing so changes the diameter of the wire which may mean it cannot easily enter the contact bucket.

This practice also causes different strands to be under different stress levels; thus the crimp will never have an equal finish.



A fundamental aspect of preparing a good crimp is the work required prior to the removal of the connector from its bag. The wire must be prepared correctly in order to ensure that the crimp is as secure and efficient as possible.

The first action that must be taken is to cut the wire to the required length. The wire-cutting tool must be sharp enough to create a clean, square cut (i. e. 90 degrees across the wire). If the wire is not cut square, this will leave strands of the conductor at different lengths. If a crimp is attempted with the wire in this condition, not all of the conductor strands will be inserted into the crimp bucket of the contact to a sufficient depth. This could potentially weaken the final crimp. When the wire has been cut correctly, the next step is to strip the insulation. In order to carry out this task correctly, a professional wirestripping tool is required. There are several on the market, but as is the case with any tool used in harness work, a higher quality tool will result in a higher quality final product.

We recommend a tool with wire gauges that also employs a mechanical action to strip the insulation. Stripping tools that rely on manual strength to strip the insulation can often result in damage to the wire, with one or more of the conductor strands being removed, which is undesirable.



An example of a good crimp showing the exposed wire

There is a degree of flexibility regarding the length of strip required. As a guide, the final product should allow a small (1 mm) length of exposed conductor visible from the back end of the contact when the wire is FULLY inserted into the crimp bucket. This will allow movement of the wire without damaging the crimp. If the insulation is cut too close to the back end of the contact, this could subject the crimp to extra stress.

			d	Wire	Str	rip
en	gth	S				

S

Exact lengths for wire strips should be included in each harness house's formal technical procedures, but as a general recommendation, no more than 1 mm of the conductor should be left exposed after crimping. If after a 'test insertion' is carried out, more of the conductor is left exposed than is required, then more of the conductor can be trimmed from the end of the wire. Again, a sharp wire-cutting tool should be used in order to ensure that the cut is clean and square.

Contact Type	Suggested Wire Strip Length
ASU #24	3.8 - 4.8 mm
ASU #22	3.8 - 4.8 mm
ASL	3.8 - 4.0 mm
ASC	3.8 - 4.8 mm
ASU Mini #22	3.8 - 4.8 mm
ASU Mini #20	5.6 - 6.6 mm
ASDD 9-Way #24	3.8 - 4.8 mm
ASD #24	3.8 - 4.8 mm
AS #22	3.8 - 4.8 mm
AS #20	5.6 - 6.6 mm
AS #16	5.6 - 6.6 mm
ASHD	15.0 - 16.0 mm



After a successful crimp, the contact can now be inserted into the connector. Using the insert/extraction tool provided, slide the wire, using your thumb, so that the wire is enclosed by the tool.



This image shows the wire successfully held in the tool.



After gently pulling the wire through the tool, the contact will now be in position at the end of the tool. The contact should fit securely and the wire should not have any slack.



This image shows detail of the tines inside the connector. The process of inserting a contact into the connector will slide the contact into position, allowing the shoulder to pass beyond the tines, which will lock into position behind the shoulder. The insertion end of the tool is molded at an angle to ease the contact into postion. The extraction end of the tool is molded with a straight end to *unlock* the tines and allow contact removal.







Contact being inserted through rear rubber of the connector. Insertion tool should NEVER be rotated, as this will damage the tool and the tines. If the tines get broken the contact may not be retained in the connector.

### **Contact Insertion (continued)**

Notes



Once the tool has been fully inserted in the back of the connector, there will be a discernable *click* as the shoulder of the contact passes through the tines and locks into position. The tool can then be removed leaving the contact locked into position.

It is recommended either to use a contact retention test tool or give the wire a small tug to ensure the contact is installed correctly.

### **Contact Extraction**



To remove a correctly installed contact, the other end of the tool is used. The extraction end of the tool has a flat aspect to enable all the tines to be unlocked together. The extraction end of the tool is inserted into the rear of the connector until the tines can be felt to unlock. Again, IPA can be used to lubricate the tool. A thumb should then be placed on the wire gripping the wire to the tool. The contact and wire can then be pulled from the back of the connector and a proper extraction can occur.

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#### WILDCAT CONNECTORS FOR UNMANNED AUTONOMOUS VEHICLES (UAV)

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