What are AT Series™ Connectors?

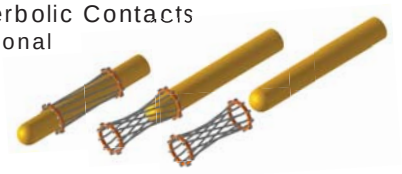
Amphenol Sine Systems AT Series™ connectors were designed as a high-performance, cost-effective solution to be used within the Heavy Equipment, Agricultural, Automotive, Military, Alternative Energy and other demanding interconnect architectures. The AT Series™ connectors contain superior environmental seals, seal retention capabilities and feature Amphenol Sine Systems RockSolid™ Contact technology. In addition, all of our AT Series™ connectors have been developed to be completely compatible with all other existing standard products industry-wide.

RockSolid™ Connections

SEALING PLUGS
- Optional

Back Cap
- Optional

Hyperbolic Contacts
- Optional

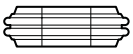


- Longer contact life
- Lower contact resistence
- Immunity to shock and vibration
- Low insertion and extraction forces
- Contact area extends 360° around pins

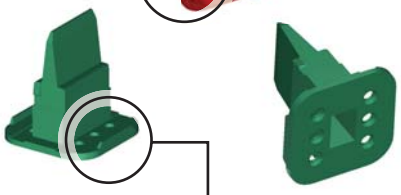
Rear Seal
- Also available in **Reduced Diameter** or **Solid**

ERGONOMICALLY DESIGNED CLIP
The increased size and tactile design of our clips allow for easier mating and unmating.

RECESSED SEALING AREA
The recessed cavity allows for a secure fitting front seal.



FRONT SEAL
The *superior* design ensures a tight environmental seal when used in conjunction with the recessed cavity of the connector body.



WEDGE with Added Seal Retention
The added seal retention feature ensures that the Front Seal does not move out of place.

AT Series™ Connectors

- The connector design incorporates an integral latching system that ensures a definitive electrical and mechanical connection
- Connector housings are manufactured with a thermoplastic material that is not only durable, but has excellent UV resistance, dielectric/mechanical properties and environmentally RoHS compliant
- The sealing system is comprised of a front and rear silicone, multi-sealing, perimeter against environmental ingress
- Contacts are derived from quality copper alloy to ensure an electrically-reliable connection. For applications demanding higher levels of performance, you can rely on our RockSolid™ contact technology

Performance Criteria NOTE: All testing meets SAE J2030 specifications

CURRENT CAPACITY	No. 16, 13 amps (max)
WIRE RANGE	No 16 contacts will accept wire ranges of 14 thru 20 awg
TEMPERATURE	Operating temperature range: -55°C to +125°C at rated current
DIELECTRIC VALUE	Meets or exceeds 1500 volts minimum
FLAME RESISTANCE	All dielectric materials have a flammability rating of UL94 V-0 or better
DROP TEST	Shall not become detached or loosened when placed at 750mm and dropped to concrete eight times
SHOCK	No latch disengagement or discontinuity shall be the result when subjected to 50 g's in each of three axis (X, Y & Z)
VIBRATION	Continued continuity without degradation to mechanical or physical attributes following vibration. (max acceleration 20 g's at Sine sweep of 10-2000Hz)
CONNECTOR TERMINAL RETENTION	When subjected to a direct pull, size 14-20 achieves minimum pull-out force of 110 newtons
CONNECTOR RETENTION	A mated connector subjected to a pulling force by the exiting wire bundle at 111 newtons times the number of contacts to a maximum of 444 newtons applying load for 30 seconds
THERMAL SHOCK	Subjected to 10 cycles at 55°C to +125°C with no cracking, chipping or other damage detrimental to the normal operation of the connector
INSULATION RESISTANCE	Insulation resistance at 25°C shall be greater than 20 megohms when 1000 VDC are applied
MATING CYCLE DURABILITY	Following 100 cycles of connection engagement and disengagement, degradation either mechanical or electrical is not evident
CONTACT MILLIVOLT DROP	No. 16 contacts with 16 awg conductor - *100 millivolt drop max at 13 amps test current
ULTRAVIOLET EFFECTS	Test the mated connectors for 1000 hours per ASTM G 154 or ASTM G 153 with 20 hours UV and 4 hours of condensation for each cycle
WATER IMMERSION	A mated connection, properly wired, placed in an oven at +125°C for 1 hour, then placed immediately in a depth of water of 1 meter for 4 hours without loss of electronic performance




Product Material

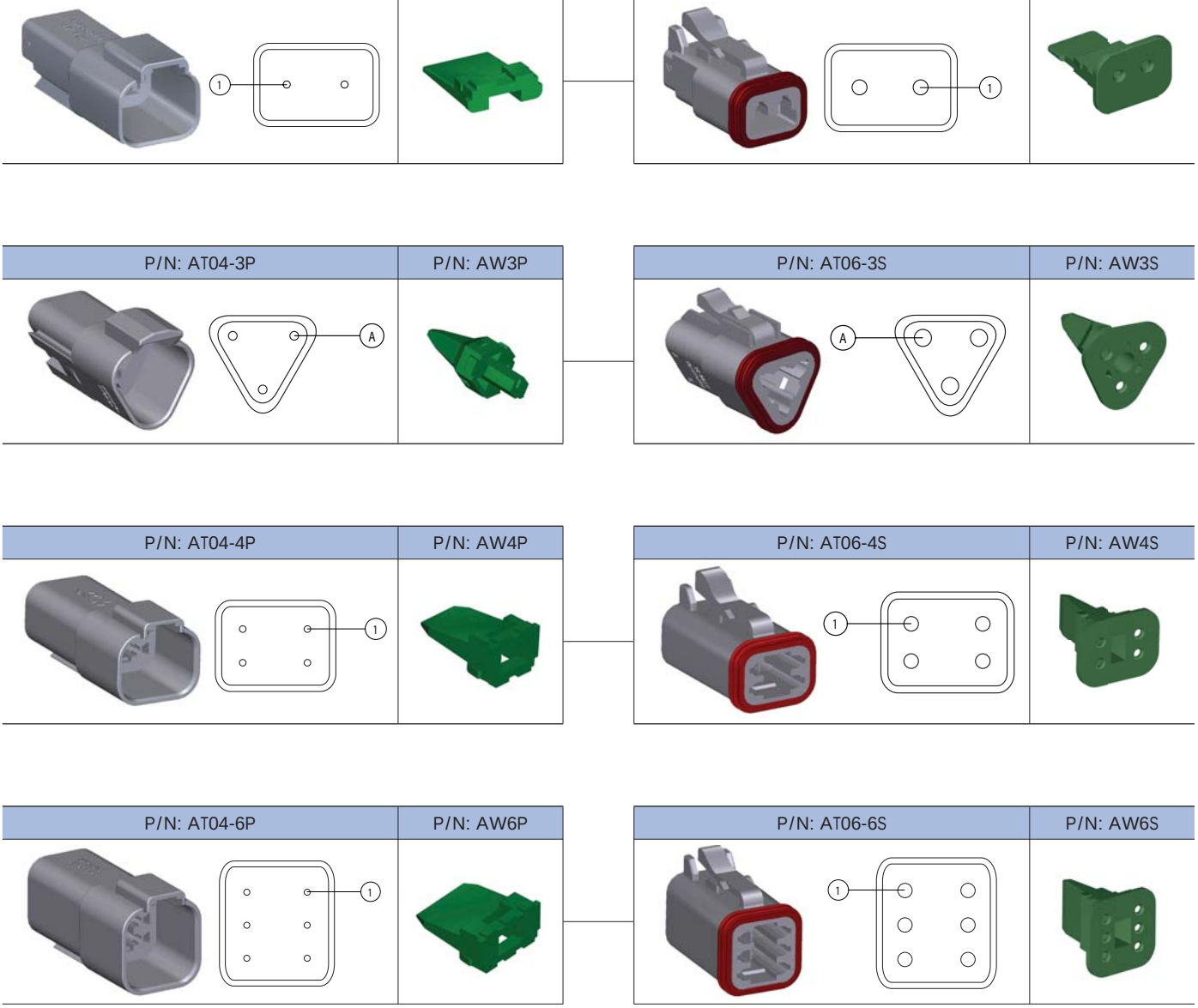
HOUSINGS	Thermoplastic
SEALS	Silicone Elastomer
SECONDARY LOCKS	Thermoplastic
CONTACTS	Copper Alloy, Nickel Plated, Gold optional

AT Series™ Specifications

AT Series™ Receptacles, Plugs and Wedges - 2, 3, 4 and 6 Position

Note: The views shown below are Mating Face Views

	RECEPTACLES	WEDGES	PLUGS	WEDGES
2 POSITION	P/N: AT04-2P	P/N: AW2P	P/N: AT06-2S	P/N: AW2S
3 POSITION	P/N: AT04-3P	P/N: AW3P	P/N: AT06-3S	P/N: AW3S
4 POSITION	P/N: AT04-4P	P/N: AW4P	P/N: AT06-4S	P/N: AW4S
6 POSITION	P/N: AT04-6P	P/N: AW6P	P/N: AT06-6S	P/N: AW6S



AT Series™ Part Numbering Sequence *(excluding 18 Position Connector)*

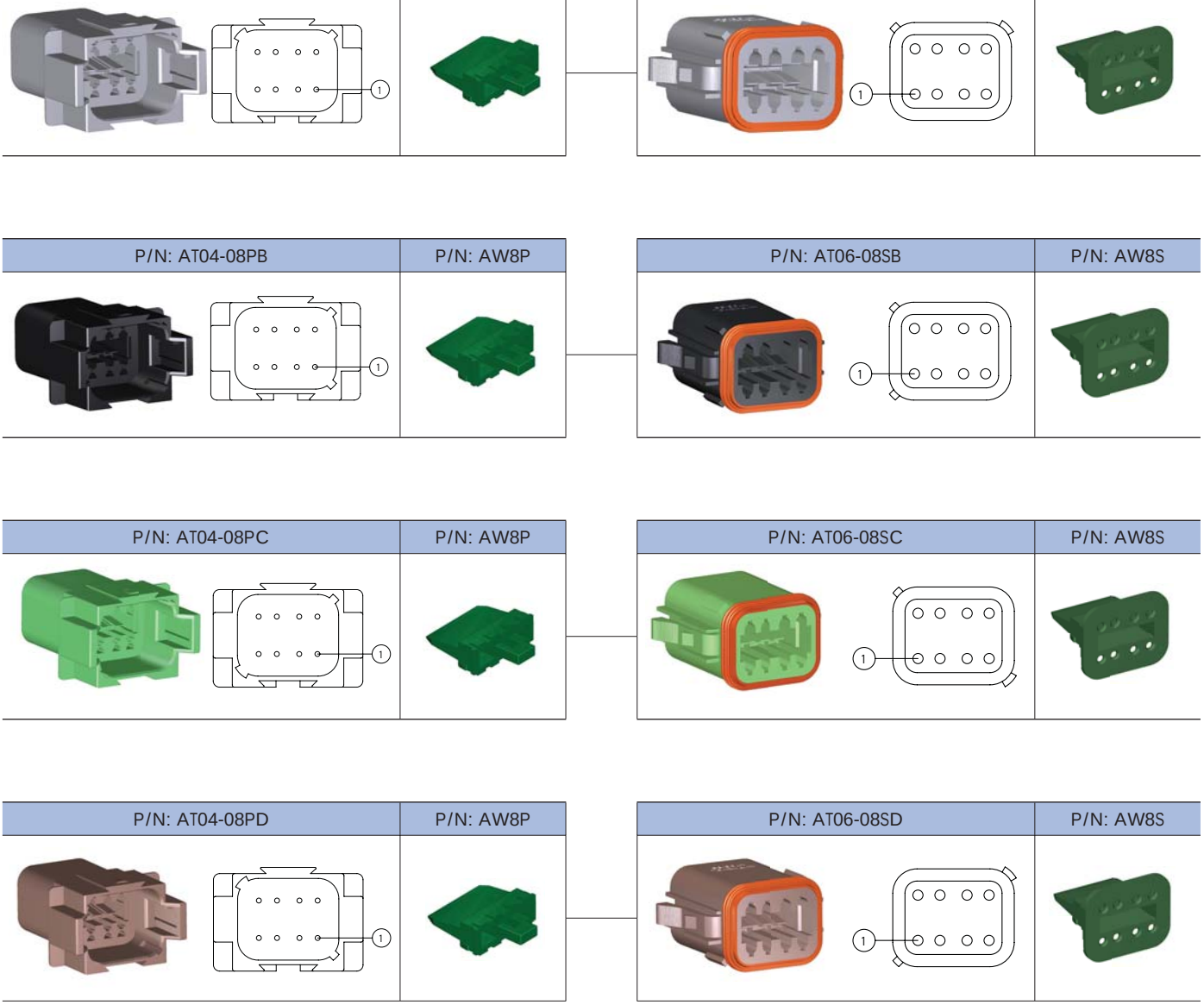
AT	06	-	12	S	A	-	XXXX
Amphenol	06 - Plug 04 - Recep.		# of Positions 2, 3, 4, 6 08 or 12	S - Socket P - Pin	Key Position A, B, C, D X1, X2		Modifications MMXX - Mixed Modification (Consult Sales Rep.) RD01 - Reduced Diameter Seal EC01 - End Cap SS01 - Solid Seal with End Cap

AT Series™

AT Series™ Receptacles, Plugs and Wedges - 8 (A-D) Position

Note: The views shown below are Mating Face Views

	RECEPTACLES	WEDGES	PLUGS	WEDGES
8 POSITION (A)	P/N: AT04-08PA	P/N: AW8P	P/N: AT06-08SA	P/N: AW8S
8 POSITION (B)	P/N: AT04-08PB	P/N: AW8P	P/N: AT06-08SB	P/N: AW8S
8 POSITION (C)	P/N: AT04-08PC	P/N: AW8P	P/N: AT06-08SC	P/N: AW8S
8 POSITION (D)	P/N: AT04-08PD	P/N: AW8P	P/N: AT06-08SD	P/N: AW8S



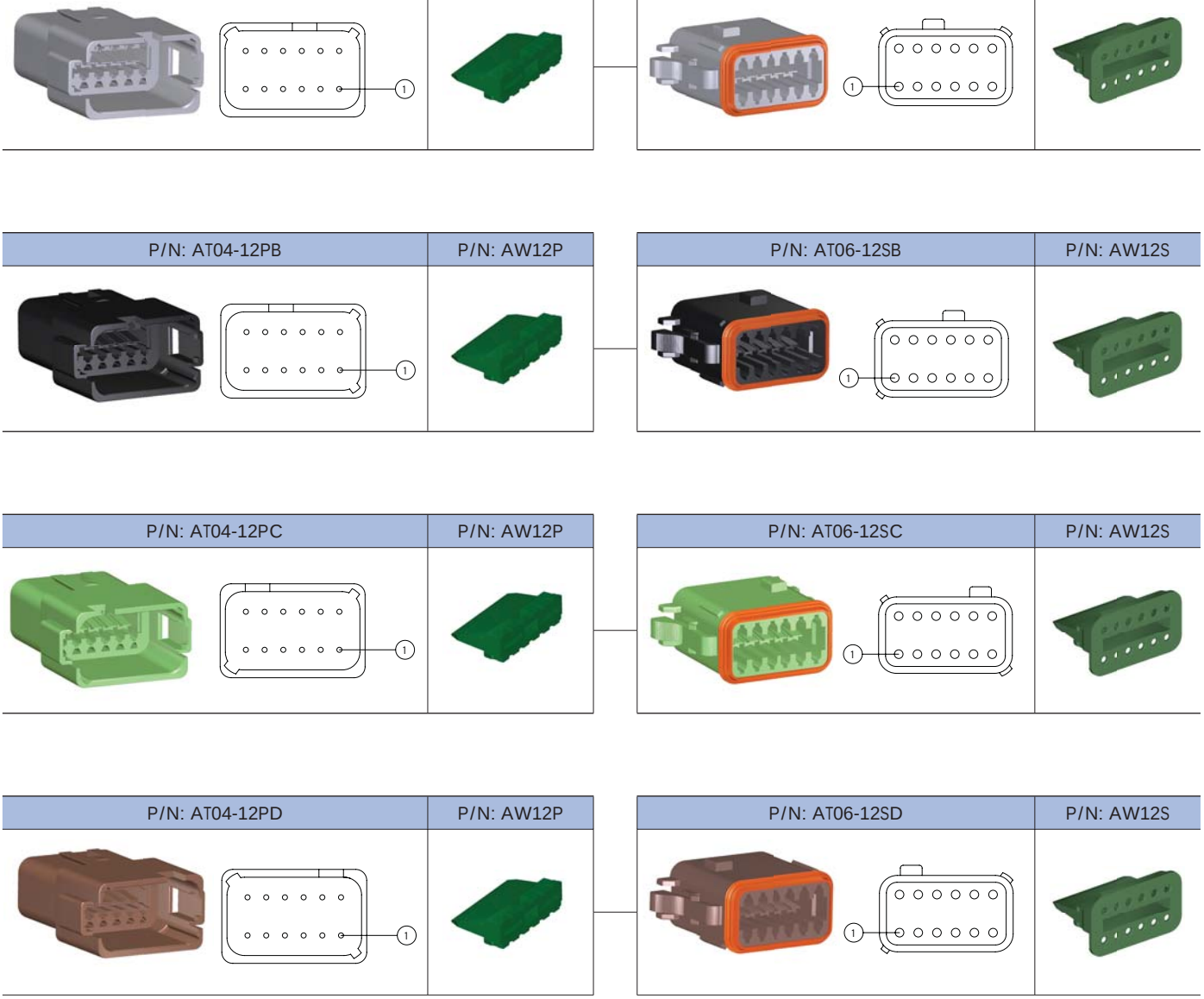
AT Series™ Part Numbering Sequence *(excluding 18 Position Connector)*

AT	06	-	12	S	A	-	XXXX
Amphenol	06 - Plug 04 - Recep.		# of Positions 2, 3, 4, 6 08 or 12	S - Socket P - Pin	Key Position A, B, C, D X1, X2		Modifications MMXX - Mixed Modification (Consult Sales Rep.) RD01 - Reduced Diameter Seal EC01 - End Cap SS01 - Solid Seal with End Cap

AT Series™ Receptacles, Plugs and Wedges - 12 (A-D) Position

Note: The views shown below are Mating Face Views

	RECEPTACLES	WEDGES	PLUGS	WEDGES
12 POSITION (A)	P/N: AT04-12PA	P/N: AW12P	P/N: AT06-12SA	P/N: AW12S
12 POSITION (B)	P/N: AT04-12PB	P/N: AW12P	P/N: AT06-12SB	P/N: AW12S
12 POSITION (C)	P/N: AT04-12PC	P/N: AW12P	P/N: AT06-12SC	P/N: AW12S
12 POSITION (D)	P/N: AT04-12PD	P/N: AW12P	P/N: AT06-12SD	P/N: AW12S



AT Series™ Part Numbering Sequence *(excluding 18 Position Connector)*

AT	06	-	12	S	A	-	XXXX
Amphenol	06 - Plug 04 - Recep.		# of Positions 2, 3, 4, 6 08 or 12	S - Socket P - Pin	Key Position A, B, C, D X1, X2		Modifications MMXX - Mixed Modification (Consult Sales Rep.) RD01 - Reduced Diameter Seal EC01 - End Cap SS01 - Solid Seal with End Cap

AT Series™

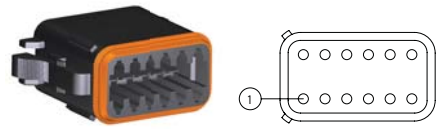
AT Series™ Plugs, Wedges and Connectors - 12 and 18 Position

All measurements in Inches

Note: The views shown below are Mating Face Views

12 POSITION (X1)

PLUG	WEDGE
P/N: AT06-12SX1	P/N: AW12S



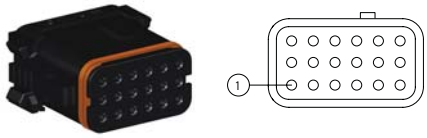
12 POSITION (X2)

PLUG	WEDGE
P/N: AT06-12SX2	P/N: AW12S

18 POSITION

PLUG (Fully assembled. Includes Wedge and End Cap)

P/N: AT16-18SB-K004



AT Series™ Optional Modifications with Part Numbering Sequencing

AT	XX	-	XX	X	X	-
Amphenol	06 - Plug 04 - Receptacle		# of Positions 2, 3, 4, 6 08, 12 or 18	S - Socket P - Pin	Key Position A, B, C, D X1, X2	

EC01

END CAP
- End Cap
- Standard Seal

AT	XX	-	XX	X	X	-
Amphenol	06 - Plug 04 - Receptacle		# of Positions 2, 3, 4, 6 08, 12 or 18	S - Socket P - Pin	Key Position A, B, C, D X1, X2	

RD01

REDUCED DIAMETER
- Reduced Seal (.053 - .120 range)

AT	XX	-	XX	X	X	-
Amphenol	06 - Plug 04 - Receptacle		# of Positions 2, 3, 4, 6 08, 12 or 18	S - Socket P - Pin	Key Position A, B, C, D X1, X2	

MM01

MIXED MODIFICATION
- End Cap
- Reduced Seal (.053 - .120 range)

AT	XX	-	XX	X	X	-
Amphenol	06 - Plug 04 - Receptacle		# of Positions 2, 3, 4, 6 08, 12 or 18	S - Socket P - Pin	Key Position A, B, C, D X1, X2	

SS01

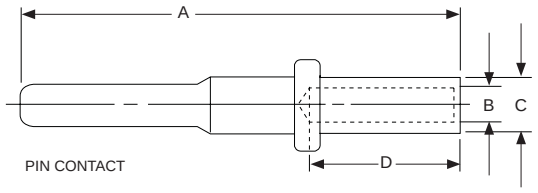
SOLID SEAL
- End Cap
- Solid Seal

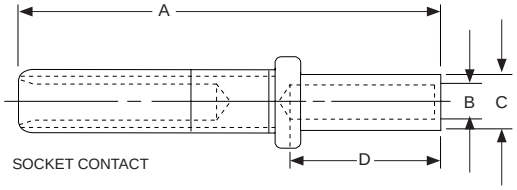
Pin Contacts, Socket Contacts and Tooling

All measurements in Inches

Listed below are quick-reference illustrations for both Military-style and DiagnosticGrade™ crimp options, as well as the Amphenol Sine Systems part numbers.

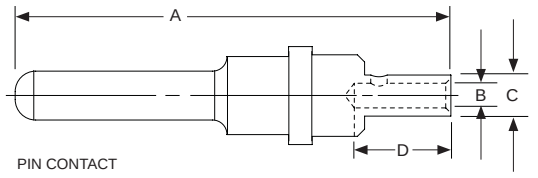
Military-Style Solid Crimp

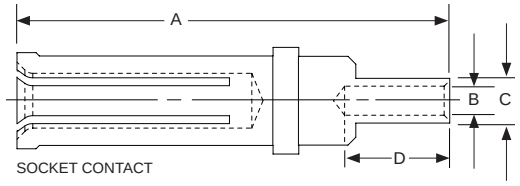




Part Numbers (Fits AT Series™ and AHD Series™)	Size/ Type	A Max	B Min	C Max	D Min	Wire Gauge Range	Recomm'd Strip Length
AT60-202-1631 (Gold) AT60-202-16141 (Nickel)	16 PIN	.821	.066	.103	.250	16 and 18	.250-.312
AT62-201-1631 (Gold) AT62-201-16141 (Nickel)	16 SOC	.759	.066	.103	.250	16 and 18	.250-.312
Part Numbers (Fits AHD Series™ only)	**Size/ Type**	**A Max**	**B Min**	**C Max**	**D Min**	**Wire Gauge Range**	**Recomm'd Strip Length**
AT60-220-1231 (Gold)	12 PIN	.821	.098	.151	.250	12 and 14	.250-.312
AT62-210-1231 (Gold)	12 SOC	.759	.098	.151	.250	12 and 14	.250-.312

DiagnosticGrade™ - Solid Crimp





Part Numbers (Fits AT Series™ and AHD Series™)	Size/ Type	A Max	B Min	C Max	D Min	Wire Gauge Range	Recomm'd Strip Length
65-54756 (Gold)	16 PIN	.826	.047	.078	.165	20	.250-.303
65-54757 (Gold)	16 SOC	.763	.047	.078	.165	20	.250-.303
Part Numbers (Fits AHD Series™ only)	**Size/ Type**	**A Max**	**B Min**	**C Max**	**D Min**	**Wire Gauge Range**	**Recomm'd Strip Length**
65-54749 (Gold)	12 PIN	.826	.047	.078	.165	20	.250-.303
65-54748 (Gold)	12 SOC	.763	.047	.078	.165	20	.250-.303

Universal Hand Crimp Tool - Part Numbers

P/N: CA-5D12

Pin Contacts, Socket Contacts and Tooling

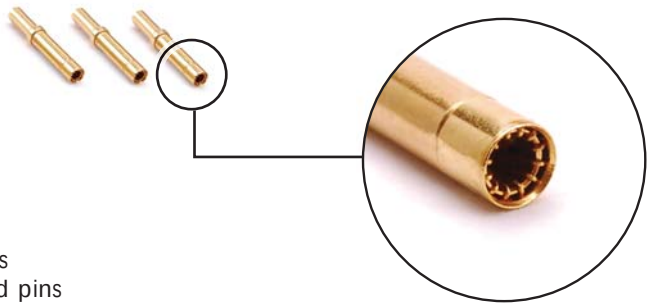
All measurements in Inches

Listed below are quick-reference illustrations for RockSolid™ and stamped and formed crimp options, as well as the Amphenol Sine Systems part numbers.

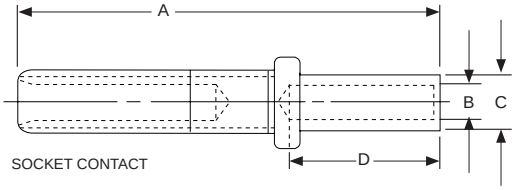
RockSolid™ Connections

Hyperbolic Contacts

- Longer contact life
- Lower contact resistence
- Immunity to shock and vibration
- Low insertion and extraction forces
- Contact area extends 360° around pins

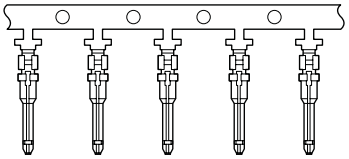


RockSolid™ Gold Contacts



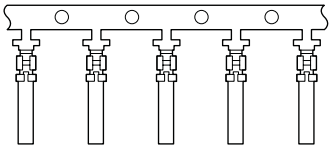
Part Numbers (Fits AT Series™ and AHD Series™)	Size/ Type	A Max	B Min	C Max	D Min	AWG Range	Recomm'd Strip Length
65-54942-14	16 SOC	.759	.073	.106	.250	14	.250-.312
65-54942-16	16 SOC	.759	.068	.103	.250	16	.250-.312
65-54942-20	16 SOC	.759	.048	.078	.172	20	.250-.312

Stamped and Formed - Size 16



PINS

Part Numbers	AWG Range	Recomm'd Strip Length	Material
AT60-14-0122	14-16	.125 - .175	Nickel
AT60-14-0144			Gold
AT60-16-0122	16-18		Nickel
AT60-16-0144			Gold
AT60-16-0622	18-20		Nickel
AT60-16-0644			Gold



SOCKETS

Part Numbers	AWG Range	Recomm'd Strip Length	Material
AT62-14-0122	14-16	.125 - .175	Nickel
AT62-14-0144			Gold
AT62-16-0122	16-18		Nickel
AT62-16-0144			Gold
AT62-16-0622	18-20		Nickel
AT62-16-0644			Gold

Crimp Die (Stamped & Formed Contacts)

P/N: MFX 3950

Sealing Plug (Size 16)

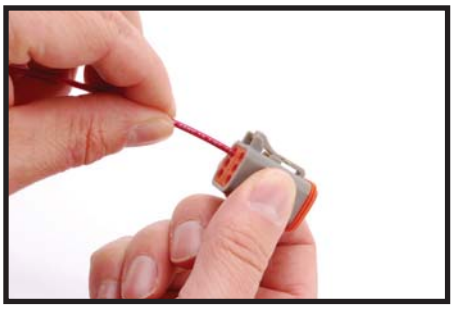
P/N: A114017

AT and AHD Series™ Accessories

Contact and Wedge Insertion

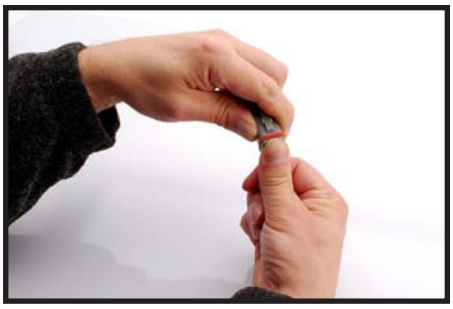
1. Grasp crimped contact approx. one inch behind the contact barrel.

2. Hold connector with rear grommet facing you.



3. Push contact straight into connector until a 'click' is felt. A slight tug will confirm placement.

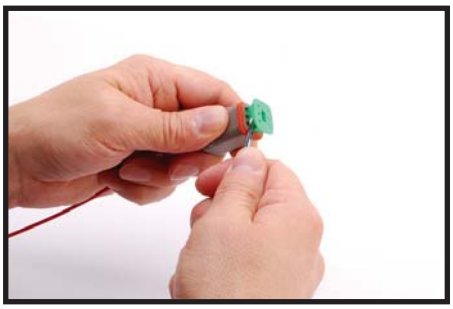
4. Insert wedge into connector.



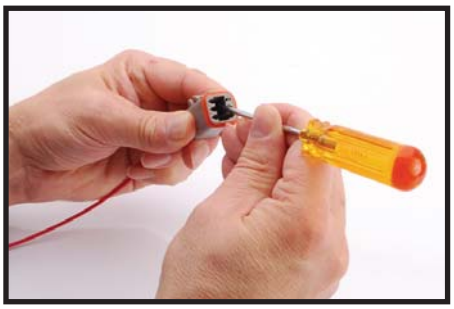
5. A 'click' will be felt when the wedge is fully installed.

Contact and Wedge Removal

1. Remove wedge by inserting a flathead screwdriver head underneath the lip of the wedge.



2. Twist the flathead screwdriver until wedge 'pops' out of connector.



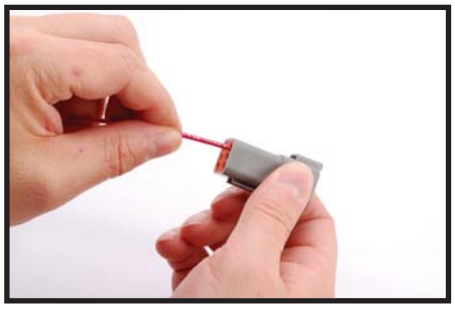
3. Use the same flathead screwdriver to remove contact inside connector.

Plug Assembly

Contact and Wedge Insertion

1. Grasp crimped contact approx. one inch behind the contact barrel.

2. Hold connector with rear grommet facing you.

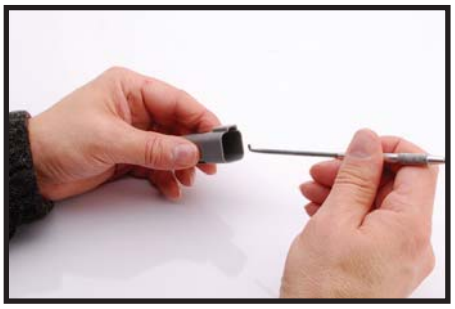


3. Push contact straight into receptacle until a ‘click’ is felt. A slight tug will confirm placement.

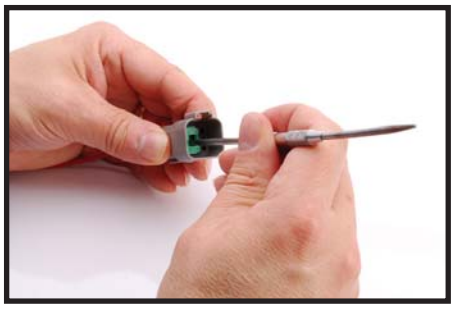
4. Insert wedge into receptacle.

5. A ‘click’ will be felt when the wedge is fully installed.

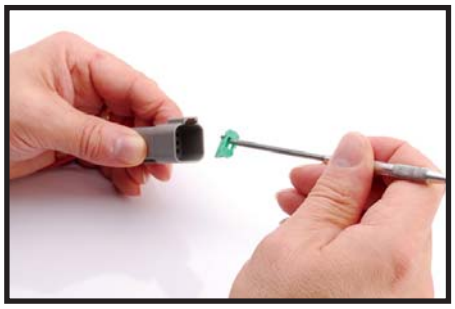
Contact and Wedge Removal



1. Remove wedge by inserting a hook into an opening of the wedge.



2. Pull until wedge ‘pops’ out of receptacle.



3. Remove wedge.