

TYPE	PRODUCT SPECIFICATION		Amphenol ANYTEK
TITLE	AQT series Terminal Block	PAGE 1 / 7	REVISION A
		AUTHORIZED BY Lena	DATE 2024.09.23
	Ref No.: SPEC-AQT01		CLASSIFICATION Unrestricted

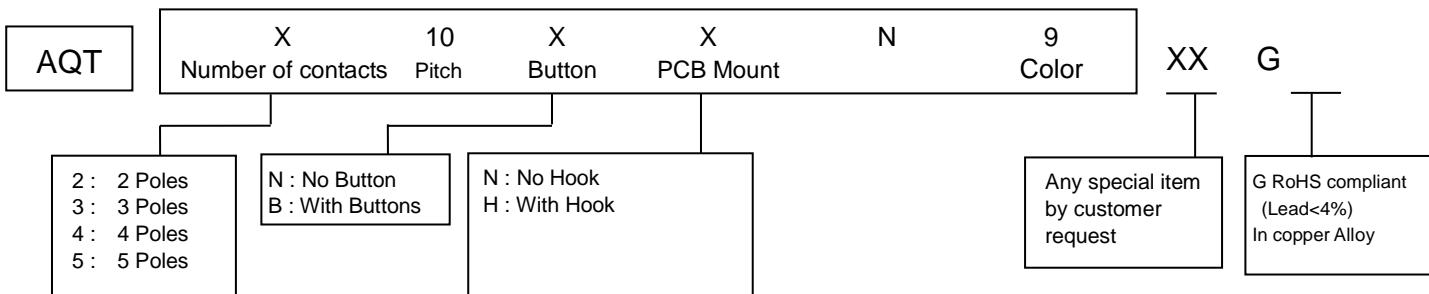
1. Scope

This specification is described for the AQT series connector applied to AWG 18~16 wires.

2. Construction & Components

2.1 Based on construction drawing

2.2 Classify and nominate



2.3 Other Standard and Specification

2.3.1 UL 1059: Terminal Blocks, Fifth Edition, revised Nov 26th, 2019

2.3.2 IEC 60947-7-1: Low-Voltage Switchgear and Controlgear - Part 7-1: Ancillary Equipment – Terminal Blocks for Copper Conductors"

IEC 60947-7-2: Low-Voltage Switchgear and Controlgear - Part 7-2: Ancillary Equipment – Protective Conductor Terminal Blocks for Copper Conductors"

IEC 60947-7-3: Low-Voltage Switchgear and Controlgear - Part 7-3: Ancillary Equipment – Safety Requirements for Fuse Terminal Blocks"

IEC 60947-7-4: Low-Voltage Switchgear and Controlgear - Part 7-4: Ancillary Equipment – PCB Terminal Blocks for Copper Conductors"

3. Conditions

3.1 Standard Atmospheric Condition unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests is as follows.

Ambient temperature: 15°C~35°C

Relative humidity: 25%~85%

Atmosphere: 86~106 K Pa

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3.2 Operating

Temperature Range: -40°C~115°C

Relative humidity: 5%~95%

Operating temperature range is the range of ambient temperature for the housing than can be operated continuously at rated voltage and rated current.

3.3 Storage

Temperature Range: -20°C~105°C

Relative humidity: 30%~70%

shelf life: One year

3.4 Assembling

Temperature Range: -5°C~105°C

3.5 Rating

Item	UL (1059) Standard
Rated Current	16A
Rated Voltage	300V
Wire Range	18~16AWG(Solid &Stranded)

4. Requirement

4.1 Material Requirements

4.1.1 Body Material: Thermoplastic UL 94 V-0

4.1.2 Lever Material: Thermoplastic UL 94 V-0

4.1.3 Bracket material: Thermoplastic UL 94 V-0

4.1.4 Contact: Copper alloy, Tin plated

4.1.5 Spring: Stainless steel,

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4.2 Mechanical Requirements

Item	Description	Pass Criteria
4.2.1 Secureness test	<p>The test shall be in accordance with UL1059 section 29, UL 486E table 21, CSAC22.2</p> <p>Selecting team samples, make wire testing, they were fixed on terminal block by rated torque, each unit rotate for 30 minutes.</p> <ol style="list-style-type: none"> 1. Loading weight: UL 486E table 21 2. Duration:30 min 	<ul style="list-style-type: none"> - No damage on terminal unit, - Wire is not pulled out of the clamping unit
4.2.2 Pullout test	<p>The test shall be in accordance with UL1059, section 29 and UL 486E table 22.</p> <p>Subjected connector to a pull force in Vertical direction</p> <ol style="list-style-type: none"> 1. Pullout force: UL 486E table 22 2. Duration: 1 min 	<ul style="list-style-type: none"> - No damage on unit, - Wire is not pulled out of the clamping unit
4.2.3 Vibration	<p>The test shall be in accordance with IEC 60068-2-6</p> <p>(a) Frequency: 10 -150-10Hz, Sweep vibration;</p> <p>(b) Amplitude: 1.5mm Max;</p> <p>(c) Test Current: 0.1A</p> <p>(d) Duration: 2.5 hours in each direction along 3 orthogonal axes, total 6 hours</p>	<ul style="list-style-type: none"> -No physical damage -Fulfill electrical requirements - No discontinuity at 1 μ sec or longer during the test.

4.3 Electrical Requirements

Item	Description	Pass Criteria
4.3.1 Low Lever Contact Resistance	<p>IEC 61984, IEC60999-1</p> <ol style="list-style-type: none"> 1. Test Current: 100mA max 2. Open Circuit Voltage: 20mV 	-20 m Ω max
4.3.2 Insulation Resistance	<p>IEC60998-1</p> <p>Apply 1000V DC or 500Volts DC after environment test between two adjacent contact with measurements made 1 minute after the application of voltage</p>	<ul style="list-style-type: none"> - 5000MΩ min - After Environment test: 5MΩ min
4.3.3 Dielectric Withstanding Voltage	<p>UL 1059, Paragraph 12.</p> <p>1600V DC for 1 minute</p>	<ul style="list-style-type: none"> - No Insulation breakdown or evidence of arc-over - Leakage Current <10mA

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4.3.4 Temperature Rising Test	UL 1059, Paragraph 11. Wire contact 6 poles of middle in series for power. Apply total 16 A current to series contacts. 1. Wire: 14AWG 2. Duration: 30 days	- Temperature rise shall not exceed 30°C
4.3.5 Heat Cycling Test	UL1059, Paragraph 33. A current of 150 percent of rated current pass through the connection for 84 on and off periods (Total 336 hours) 1. Current: 24 A 2. Wire: 14AWG 3. On period: 3.5h Off period:0.5h	- The temperature rising for the last on period shall not be more than 5°C higher than the first on period

4.4 Environment Requirements

Item	Description	Pass Criteria
4.4.1 Humidity Resistance	IEC 60998-1 Paragraph 12.2 Expose the connector to the following condition. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours. After which the specified measurement shall be performed immediately. 1. Temperature:30±2°C 2. Humidity: 91%~95% R.H. 3. Duration: 48 hours.	-No physical damage. -Fulfill electrical requirements
4.4.2 Accelerated Aging Test	IEC 60998-1 Expose the connector to the following condition. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for at least 4 hours, after which the specified measurements shall be performed. Temperature: 105±2°C, Duration: 168 hours	-No physical damage. -Fulfill electrical requirements

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4.4.3 Low temperature	<p>IEC 60068-2-1</p> <p>Expose the connector to the following condition. Upon completion of the exposure period, the test specimens shall under at standard atmospheric conditions for recovery for at least 1 hours, after which the specified measurements shall be performed.</p> <p>Temperature: $-20 \pm 2^\circ\text{C}$,</p> <p>Duration: 48 hours</p>	<ul style="list-style-type: none"> -No physical damage. -Fulfill electrical requirements
4.4.4 Thermal shock	<p>IEC 60068-2-14,</p> <p>Specimen shall be exposed to the following conditions.</p> <p>(a) Temperature range: $-20 \pm 2^\circ\text{C}$ for 30 minutes followed by $105 \pm 2^\circ\text{C}$ for 30 minutes.</p> <p>(b) Number of cycle: 100 cycles</p>	<ul style="list-style-type: none"> -No visible cracks, swelling or other damage -Fulfill electrical requirements
4.4.5 Salt Spray	<p>IEC 60068-2-11,</p> <p>Specimen shall be exposed to the following salt mist conditions.</p> <ol style="list-style-type: none"> 1. Temperature: $35 \pm 2^\circ\text{C}$ 2. Density: $5 \pm 1\%$ in weight 3. Duration: 24 hours 	<ul style="list-style-type: none"> -Corrosion area $<5\%$. -No visible cracks, swelling or other damage -Fulfill electrical requirements

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4.5 Test Sequence

NO.	TEST ITEM	Test Group									
		A	B	C	D	E	F	G	H	I	J
XX	Functional and Visual check	1.4	1	1.5	1.3	1.3	1.	1.5	1.5	1.3	1
1	Wire Insertion and withdrawal		2								
2	Secureness test	2									
3	Pullout test	3									
4	Vibration			3							
5	Contact Resistance			2.4							
6	Insulation Resistance					3	3	3	3		
7	Dielectric Withstanding Voltage		4			4	4	4	4		
8	Temperature Test		3								
9	Heat cycling test				2						
10	Humidity Resistance					2					
11	Accelerated aging test						2				
12	Low temperature							2			
13	Thermal shock								2		
14	Salt Spray									2	
15	RoHS										2
Request Test QTY		4P Each wire	6P	5pcs or 10P	5pcs	5pcs	4P Each wire	5pcs	5pcs	5pcs	5pcs

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REVISION RECORD