

New

Amphenol LTW

Interconnect Solutions for Data Center

**Innovative total solution
for next-generation systems**



Modular I/O Solution

Ideal solution for immersion
cooling

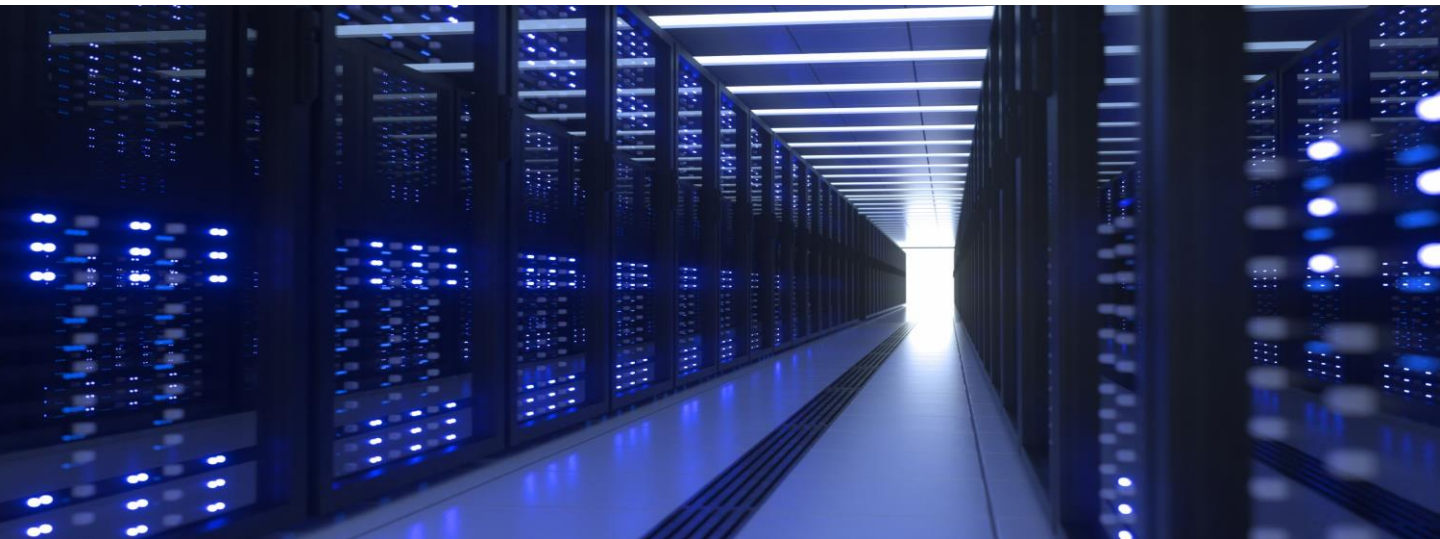


OPEN
COMMUNITY®



SnapQD Series

Ideal solution for cold plate
cooling



Unrivaled InterConnects for Harsh Environments

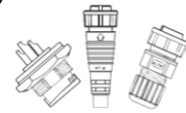
About ALTW

**3**

Production Sites
(Taiwan, China, Mexico)

**30+**

Market Applications

**90,000+**

Products

Since 1993, Amphenol LTW Technology “ALTW” lives and breathes to create, innovate, design and produce “***unrivaled interconnects for harsh environments***”. With over 300 worldwide patents, not only does ALTW offer the broadest and widest range of rugged interconnects in the industry but also customization with the mission of “Customer Satisfaction First”. Undoubtedly, ALTW is the leader in rugged interconnects, highly recognized for its uncompromising quality, short lead time, fast and tailored service and its very competitive pricing.

Regardless of the challenging environments that your products will be subject to; there is a very good chance that you will find what you are looking for with ALTW.

Unrivaled InterConnects for Harsh Environments

ALTW's Capability

Liquid cooling is not a product: It's a solution

Amphenol LTW's connectors support the demands of modern data centers, which are essential in our data-driven world. Data centers require high-speed, high-bandwidth connections to manage the massive amounts of data flowing through servers, switches, and routers. These interconnected devices rely on advanced connectivity solutions for reliable and efficient data transfer, supporting AI, IoT, and cloud computing applications.

We offer a diverse range of **high-speed, high-performance** interconnects engineered for next-generation systems, ensuring seamless, high-performance operation. These solutions support both hyperscale and traditional data centers in handling the increasing demands of edge computing, 5G, and Industry 4.0, all while prioritizing reliability and minimal downtime.



High
Durability



Unparalleled
Performance



Expert
Flexibility

Unrivaled InterConnects for Harsh Environments

Applications and Products

Applications	Immersion Cooling Tank One / Two Phase	IT-Chassis Two Phase	Cold Plate Liquid Cooling	Large Scale CDU	Sensors (Leak, Pressure)
					
Power Connector	Busbar Connector up to 1400A / Plugs compliance with IEC 60320 C19/C20	Busbar Clip from 25A ~ 50A	-	-	-
Data Connector	USB 2.0, USB 3.0 / RJ / M12 / D-Sub / HDMI / DisplayPort	USB 2.0, USB 3.0 / HDMI / MPO Connector / D-Sub / RJ / DisplayPort	2 ~ 6 pin connector, < 5A	2 ~ 6 pin M12 connector, < 5A	2 ~ 6 pin connector, < 5A
Liquid Cooling Connector	-	SnapQD	SnapQD	SnapQD	-

Electronic Liquid Cooling



- Liquid-cooled servers
- Semiconductor equipment
- Optical modules
- Radar, electronic countermeasure equipment
- Microwave equipment

Transportation



- Railway mass transit
- Marine
- Autonomous

Renewal Energy Liquid Cooling



- Energy storage
- Fast charging station

Industrial



- Mold
- Laser
-

Medical



- Medical equipment



CUSTOM PROJECT CAPABILITIES

ALTW can engineer a custom-made connector for your application. Count on us to deliver the fluid handling expertise essential for your unique project requirements. Contact us, collaborating early in your design process empowers you to find the ideal connector perfectly suited for your needs.

Modular I&O Solution

The modular I&O solution delivers robust interconnect solutions for immersion cooling, offering high-speed data transmission, IP68, and customizable designs for reliable, space-efficient systems.



Impressive Innovation

- ✓ Space-efficient design
- ✓ Flexible and tailored customizable display options
- ✓ High-speed data transmission up to Cat 6A, ensuring reliable and fast Ethernet connectivity
- ✓ IP68 unmated waterproof performance from the interior to the exterior, preventing dielectric oil leakage within the system
- ✓ Operating Temperature from -40°C to +80°C to perform seamlessly in extreme conditions
- ✓ Customized sealing material design to avoid coolant leakage



Unrivaled InterConnects for Harsh Environments

1U Modular Dimensions



Modular I&O Solution

FAQs

Modular products have which connectors to choose?



Commonly used RJ45, USB, HDMI, VGA, etc., customers can choose according to their needs

Mode of connection



Direct outlet type and interface pair type

Compatibility with coolant



The main material compatibility is excellent :

Outer shell: Metal

Rubber: NBR or HNBR

Thermoplastic: PA66

Cable jacket material: XLPE or PU

Sealing property



The product can pass the pressure test of 120Kpa/30s

Locking mode



Use 4 to 6 M5 screws

Temperature range



-40 ~ 80°C

How to avoid siphoning from internal cables



The single port and module design both have sealing mechanism to isolate liquid flow in between.

KNOW EXACTLY WHAT YOU'RE LOOKING FOR?

Great, let's get down to business.

Just call or e-mail us at sales@ltw-tech.com to get more product information.



SnapQD Series

The SnapQD ensures unparalleled performance in cold plate cooling with flat-face valves, push-to-connect design, high flow, no spillage, and compliance with OCP UQD standards.

SnapQD – ORB & BSPP Thread



- ✓ Flat face valves
- ✓ Push-to-connect design
- ✓ High flow and no spillage
- ✓ Best force to connect
- ✓ Meets OCP UQD requirements
- ✓ Suitable cooling liquid: DI water, Ultrapure water, Ethylene glycol, Polypropylene glycol, and PFPE



ORB

BSPP

SnapQDB – ORB Thread



- ✓ Designed for blind mating behind blades
- ✓ Compact Profile
- ✓ Low Insertion Force
- ✓ Optimized Flow Efficiency
- ✓ Ultra-Low Fluid Loss



General Specification

Color Coding Options	Input: Blue / Output: Red	Shipping Temperature	-40°C ~ +150°C
Connection Type	Push-pull hose barb / Male Thread	Material of Plug	Stainless Steel
Valve Type	Flat Face	Material of Seals	Ethylene-Propylene (EPDM)
Durability Requirements	5000 times	Maximum Operating Pressure	290 psi (20bar)
Material of Socket	Stainless Steel (Only Sleeve: Aluminum alloy)	Minimum Burst Pressure	1160 psi (80bar)
Operating Temperature	-40°C ~ +120°C		

Coolant Compatibility

Seal material	Pure water	EG25	PG25	DI Water	Oil	PFS
NBR	✓				✓	
FKM					✓	
EPDM	✓	✓	✓	✓		✓
FVMQ	✓	✓	✓	✓	✓	

SQD02 Fluid Loss Requirement <0.025ml

Nominal diameter DN (mm): 3
Connection on Panel-Panel Distance: 43.5mm
Connection Force without Pressure: 38N
Minimum Cv: 0.54 (plug to socket)
Flow Rating (0.2bar pressure): 7.5L/min



SQD04 Fluid Loss Requirement <0.025ml

Nominal diameter DN (mm): 5
Connection on Panel-Panel Distance: 53.0mm
Connection Force without Pressure: 44N
Minimum Cv: 1.53 (plug to socket)
Flow Rating (0.2bar pressure): 21L/min



SQD06 Fluid Loss Requirement <0.025ml

Nominal diameter DN (mm): 7
Connection on Panel-Panel Distance: 65.2mm
Connection Force without Pressure: 54N
Minimum Cv: 2.44 (plug to socket)
Flow Rating (0.2bar pressure): 38L/min



SQD08 Fluid Loss Requirement <0.055ml

Nominal diameter DN (mm): 10
Connection on Panel-Panel Distance: 72.2mm
Connection Force without Pressure: 70N
Minimum Cv: 4.25 (plug to socket)
Flow Rating (0.2bar pressure): 63L/min



NEW
INNOVATION



NON-SPILL



LOW
FLUID LOSS



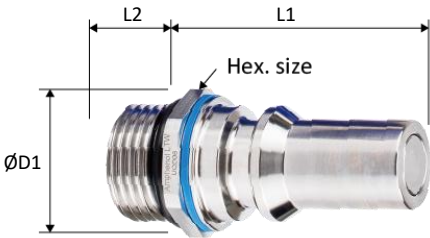
UNIQUE
APPEARANCE



HIGH
DURABILITY

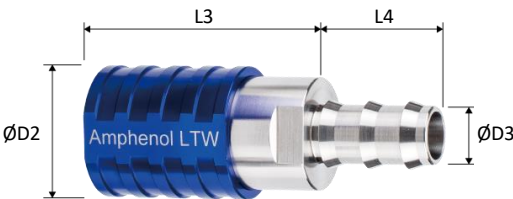
Dimensions

PLUG



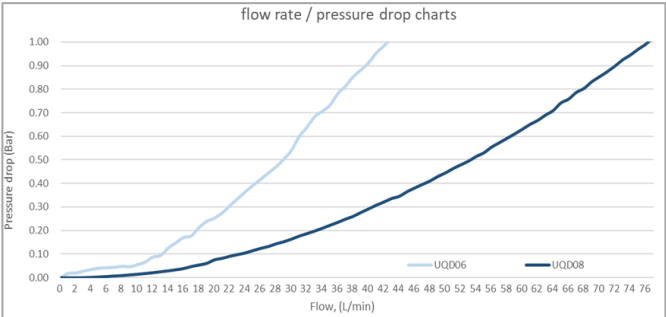
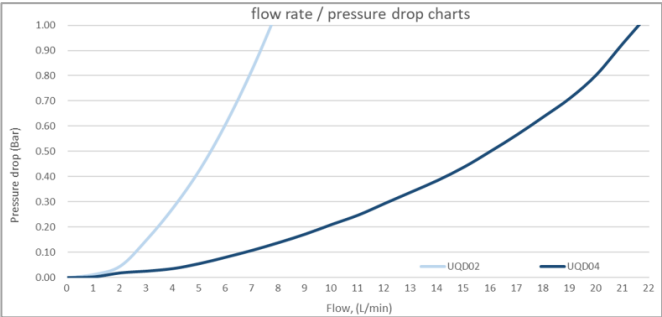
Product	Part Number	L1	L2	ØD1	Hex.	Connection Thread Size	Recommended Torque
UQD-02	SQD-04PAEM-PBE001 (Blue) SQD-04PAEM-PRD001 (Red)	31	9.1	Ø17.0	16	7/16"-20 UNF	15 - 17 N.m
	SQD-02PAJM-PBE001 (Blue) SQD-02PAJM-PRD001 (Red)				17	G1/4"	20 - 25 N.m
UQD-04	SQD-04PAEM-PBE001 (Blue) SQD-04PAEM-PRD001 (Red)	35.4	10	Ø20.9	19	9/16"-18 UNF	25 - 27 N.m
	SQD-04PAKM-PBE001 (Blue) SQD-04PAKM-PRD001 (Red)				19	G3/8"	30 - 40 N.m
UQD-06	SQD-06PAFM-PBE001 (Blue) SQD-06PAFM-PRD001 (Red)	38.9	11.1	Ø24.0	22	3/4"-16 UNF	25 - 27 N.m
	SQD-06PAKM-PBE001 (Blue) SQD-06PAKM-PRD001 (Red)				22	G3/8"	30-40 N.m
UQD-08	SQD-08PAGM-PBE001 (Blue) SQD-08PAGM-PRD001 (Red)	42.9	12.7	Ø29.5	27	7/8"-14 UNF	35 - 37 N.m
	SQD-08PALM-PBE001 (Blue) SQD-08PALM-PRD001 (Red)				27	G1/2"	50-60 N.m

SOCKET



Product	Part Number	L3	L4	ØD2	ØD3	Connection Thread Size
SQD-02	SQD-02SBBN-PBE001 (Blue) SQD-02SBBN-PRD001 (Red)	33	21.5	Ø20.0	Ø8.8	1/4" hose
SQD-04	SQD-04SBCN-PBE001 (Blue) SQD-04SBCN-PRD001 (Red)	45.6	24.5	Ø26.0	Ø12.0	3/8" hose
SQD-06	SQD-06SBDN-PBE001 (Blue) SQD-06SBDN-PRD001 (Red)	52	27	Ø30.0	Ø15.2	1/2" hose
SQD-08	SQD-08SBEN-PBE001 (Blue) SQD-08SBEN-PRD001 (Red)	60	37	Ø35.0	Ø18.6	5/8" hose

Water Flow



SnapQDB

General Specification

Color Coding Options	True Color	Shipping Temperature	-40°C ~ +150°C
Connection Type	Male Thread	Material of Plug	Stainless Steel
Valve Type	Flat Face	Material of Seals	Ethylene-Propylene (EPDM)
Durability Requirements	5000 times	Maximum Operating Pressure	290 psi (20bar)
Material of Socket	Stainless Steel	Minimum Burst Pressure	1160 psi (80bar)
Operating Temperature	-40°C ~ +120°C		

Coolant Compatibility

Seal material	Pure water	EG25	PG25	DI Water	Oil	PFS
NBR	✓				✓	
FKM					✓	
EPDM	✓	✓	✓	✓		✓
FVMQ	✓	✓	✓	✓	✓	

SQDB02 Fluid Loss Requirement <0.012ml

Nominal diameter DN (mm): 3
Connection on Panel-Panel Distance: 36.4mm
Connection Force without Pressure: <38N
Minimum Cv: 0.69
Flow Rating (0.2bar pressure): 8.5 LPM



SQDB04 Fluid Loss Requirement <0.025ml

Nominal diameter DN (mm): 5
Connection on Panel-Panel Distance: 44.6mm
Connection Force without Pressure: <43N
Minimum Cv: 1.19
Flow Rating (0.2bar pressure): 20 LPM



SQDB06 Fluid Loss Requirement <0.025ml

Nominal diameter DN (mm): 7
Connection on Panel-Panel Distance: 48.1mm
Connection Force without Pressure: <59N
Minimum Cv: 3.17
Flow Rating (0.2bar pressure): 46 LPM



SQDB08 Fluid Loss Requirement <0.055ml

Nominal diameter DN (mm): 10
Connection on Panel-Panel Distance: 52.1mm
Connection Force without Pressure: <70N
Minimum Cv: 5.28
Flow Rating (0.2bar pressure): 74 LPM



NEW
INNOVATION



NON-SPILL



LOW
FLUID LOSS



UNIQUE
APPEARANCE



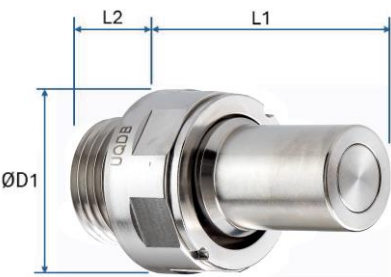
HIGH
DURABILITY

Unrivaled InterConnects for Harsh Environments

SnapQDB

Dimensions

PLUG



Product	Part Number	L1	L2	ØD1	Hex.	Connection Thread Size	Recommended Torque
UQD-02	SQD-04PAEM-PBE001 (Blue) SQD-04PAEM-PRD001 (Red)	27.02	9.1	Ø21.0	20	7/16"-20 UNF	15 – 20 N.m
UQD-04	SQD-04PAEM-PBE001 (Blue) SQD-04PAEM-PRD001 (Red)	35.35	10	Ø25.4	24	9/16"-18 UNF	18 – 22 N.m
UQD-06	SQD-06PAFM-PBE001 (Blue) SQD-06PAFM-PRD001 (Red)	38.9	11.1	Ø28.4	27	3/4"-16 UNF	55 – 60 N.m
UQD-08	SQD-08PAGM-PBE001 (Blue) SQD-08PAGM-PRD001 (Red)	42.9	12.7	Ø31.4	30	7/8"-14 UNF	65 – 75 N.m

SOCKET



Product	Part Number	L3	L4	ØD2	ØD3	Connection Thread Size
UQD-02	SQD-02SBBN-PBE001 (Blue) SQD-02SBBN-PRD001 (Red)	23.6	10.0	Ø19.0	Ø21.4	9/16"-18" UNF
UQD-04	SQD-04SBCN-PBE001 (Blue) SQD-04SBCN-PRD001 (Red)	28.5	11.1	Ø23.0	Ø25.4	3/4"-16" UNF
UQD-06	SQD-06SBDN-PBE001 (Blue) SQD-06SBDN-PRD001 (Red)	31.8	12.7	Ø25.0	Ø28.4	7/8"-14 UNF
UQD-08	SQD-08SBEN-PBE001 (Blue) SQD-08SBEN-PRD001 (Red)	35.7	15.1	Ø27.0	Ø31.4	1-1/16"-12 UNF

Water Flow



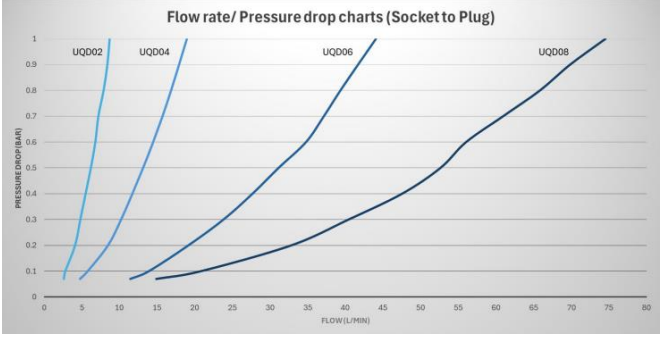
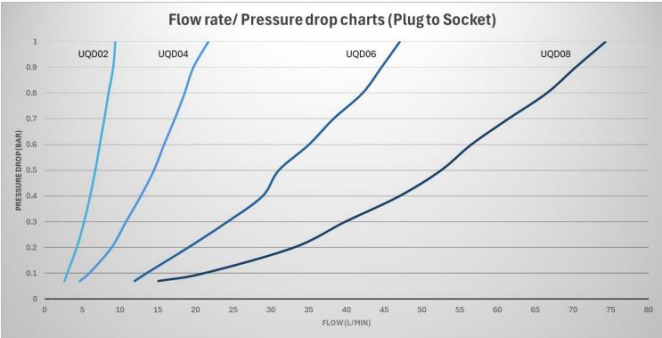
SQD02

SQD04



SQD06

SQD08



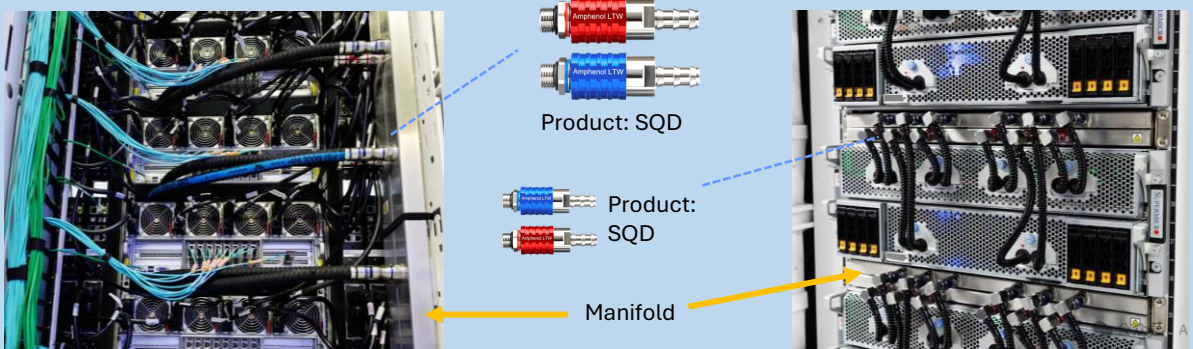
SnapQD Series

Applications

■ 1U Server Liquid Cooling Cabinet



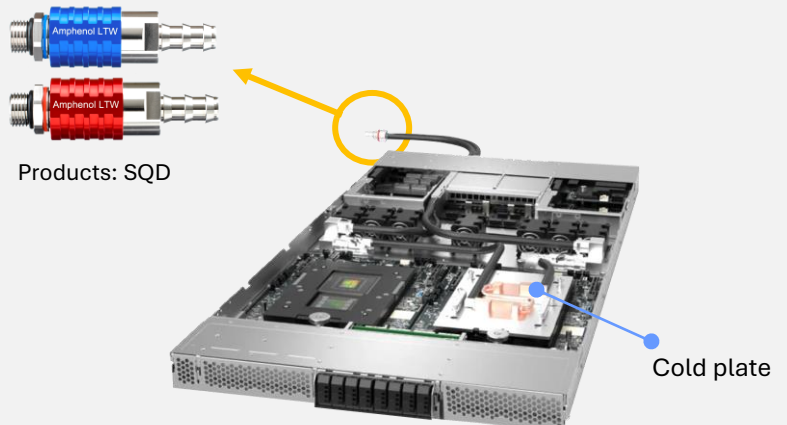
■ 4U Server Liquid Cooling Cabinet



■ Manifold



■ 1U Rack



SnapQD Series

FAQs



In addition to IT applications, are there any other applications for SnapQD products?

The main application of SnapQD is in IT facilities and devices, with some usage in other applications such as semiconductors and medical fields.



SnapQD is used on server racks. How do you select the correct size?

Based on thermal technical requirements, the PUE (Power Usage Effectiveness) value is calculated to determine the appropriate SnapQD size for the device. ALTW provides options based on flow rate requirements. Generally, SQD02/04 types are used more frequently than SQD06/08, and all are available for server racks.



Has Amphenol provided a SnapQD specification data sheet, along with a completed testing scope and test report per OCP requirements?

Yes, you may call or send an email to your contact window for more detail.



Is Amphenol SnapQD the same as OCP UQD? And is it OCP UQD compliant?

ALTW follows OCP requirements, including performance and dimensions.



Does it mate with other brands as well?

Yes! Please contact us for more detail.

KNOW EXACTLY WHAT YOU'RE LOOKING FOR?

Great, let's get down to business.

Just visit our e-commerce website at www.amphenolltw.com to get samples.

Call or e-mail us at sales@ltw-tech.com to get more product information.





Amphenol LTW

Contact Us

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