Amphenol
INDUSTRIAL PRODUCTS GROUP

Amphenol LTW®
Unrivaled InterConnects for Harsh Environments

Snap Quick Disconnect

Product Specification

1. Scope

A leading professional solutions provider of waterproof connectors (overmolded with cable, receptacle, field installable) in the industry, Amphenol LTW always fulfills any requirements with high functionality and reliability products; even it is a very special requirement. And it is highly recommended to be applied to harsh environment. Amphenol LTW（ALTW）

This product specification sheet describes the product application in the markets such as Renewable Energy, Industrial Automation, LED Lighting, Marine, Broadband Wireless Access, Smart Grid, Heavy Equipment, Medical, Electrical Vehicle, AI servers cooling…etc.

2. Applicable Documents

2.1 OCP Universal Quick Disconnect(UQD) Specification / OCP UQD

Amphenol LTW（ALTW）following OCP UQD requirement/ ALTW

3. Specification

3.1 Material

Parts	Material
Socket	Stainless Steel (only Sleeve: Aluminum alloy)
Plug	Stainless Steel
Seal	EPDM

3.2 Seal with coolant compatibility

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

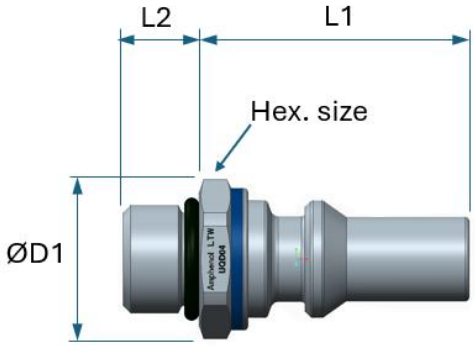
3.3 Product Special Specification

Item		SQD02	SQD04	SQD06	SQD08
Nominal Diameter(mm)		DN3	DN5	DN7	DN10
Color Coding Options		Input: Blue/ Output: Red			
Connection Type		Push-Lok hose barb / Male Thread			
Valve Type		Flat Face			
Durability Requirements		5000 times			
Connection on Panel-Panel Distance		43.5mm	53mm	65.2mm	72.2mm
Connection Force without Pressure		38N	44N	54N	70N
Fluid Loss Requirement		<0.025ml	<0.025ml	<0.025ml	<0.055ml
Maximum Operating Pressure		20bar			
Minimum Burst Pressure		80bar			
Minimum Cv	Plug to Socket:	0.54	1.53	2.44	4.25
Flow Rating		7.5L/min	21L/min	38L/min	63L/min
Operating Temperature Range		-40℃-120℃			
Shipping Temperature Range		-40°C- 150°C			

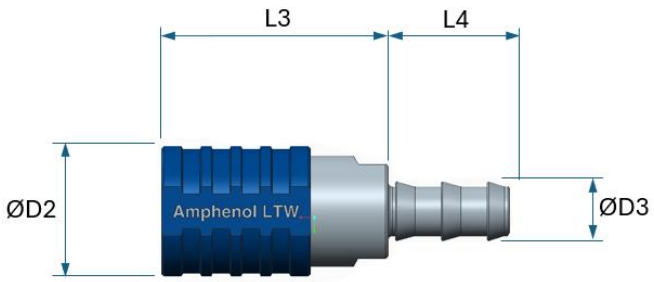
3.4 Thread force

Types	Recommended Torque
SQD02, 7/16”-20 UNF male Thread	15-17 N.m
SQD04, 9/16”-18 UNF male Thread	25-27 N.m
SQD06, 3/4”-16 UNF male Thread	25-27 N.m
SQD08, 7/8”-14 UNF male Thread	35-37 N.m

3.5 Dimensions



Plug



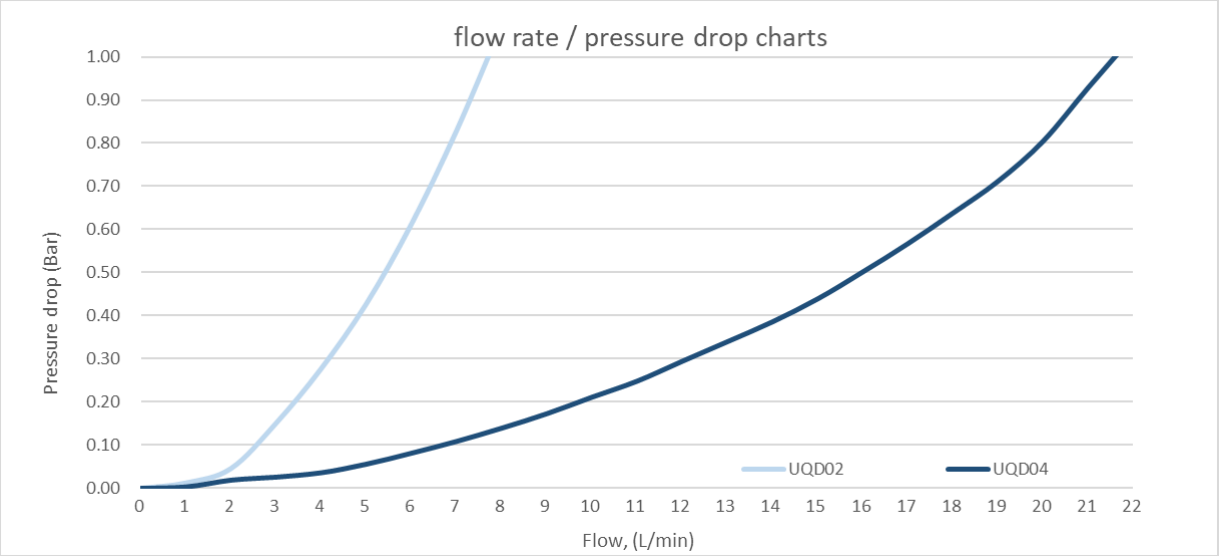
Socket

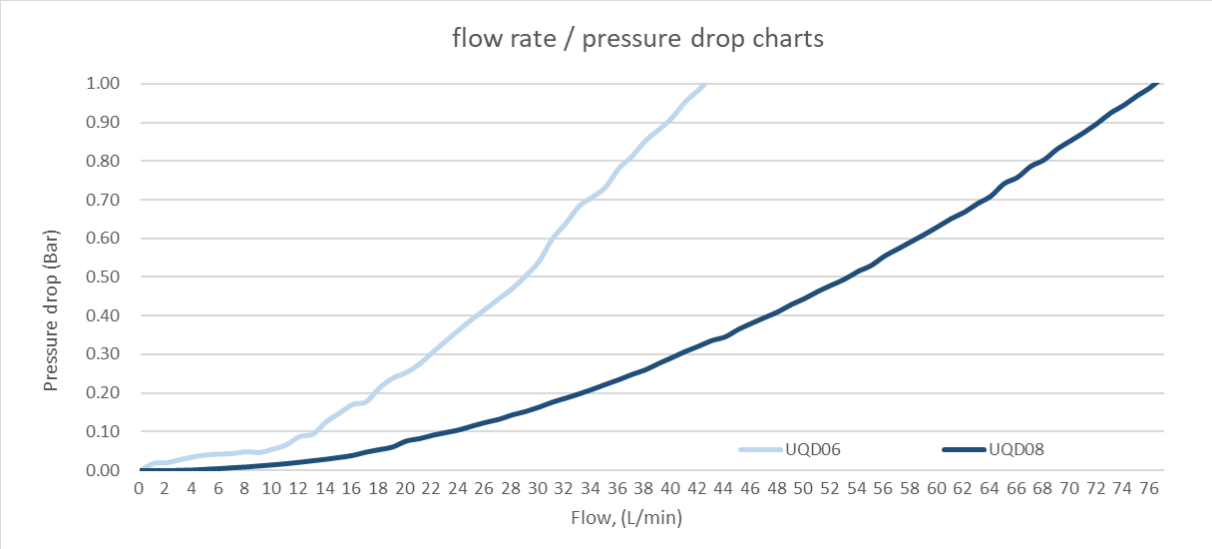
Plug Standard Dimensions						
Part Number	**Color**	**L1**	**L2**	**ØD1**	**Hex.**	**Connection Type**
SQD02	RED BLUE	31.0mm	9.1mm	Ø17.0mm	16mm	7/16”-20 UNF male thread
SQD04	RED BLUE	35.4mm	10.0mm	Ø20.9mm	19mm	9/16”-18 UNF male thread
SQD06	RED BLUE	38.9mm	11.1mm	Ø24.0mm	22mm	3/4”-16 UNF male thread
SQD08	RED BLUE	42.9mm	12.7mm	Ø29.5mm	27mm	7/8”-14 UNF male thread

Socket Standard Dimensions						
Part Number	**Color**	**L3**	**L4**	**ØD2**	**ØD3**	**Connection Type**
SQD02	RED BLUE	33.0mm	21.5mm	Ø20.0mm	Ø8.8mm	1/4” Push-Lok hose barb
SQD04	RED BLUE	45.6mm	24.5mm	Ø26.0mm	Ø12.0mm	3/8” Push-Lok hose barb
SQD06	RED BLUE	52.0mm	27.0mm	Ø30.0mm	Ø15.2mm	1/2” Push-Lok hose barb
SQD08	RED BLUE	60.0mm	37.0mm	Ø35.0mm	Ø18.6mm	5/8” Push-Lok hose barb

3.6 Test performance

Liquid: Water





4. Test Requirement

4.1 Rating

Series	Nominal Diameter(mm)	Fluid Loss	Coupling Force	Operating Pressure	Burst Pressure	Flow Rating	Cv
SQD02	DN3	< 0.020 ml	<38N	100psi Max.	300psi Min.	> 0.55 GPM	> 0.25
SQD04	DN5	< 0.025 ml	<44N	100psi Max.	300psi Min.	> 1.70 GPM	> 0.80
SQD06	DN7	< 0.035 ml	<54N	100psi Max.	300psi Min.	> 3.00 GPM	> 1.60
SQD08	DN10	< 0.070 ml	<70N	100psi Max.	300psi Min.	> 4.70 GPM	> 2.50

4.2 Appearance

Item	Test Condition	Requirement
Examination of product	IEC 60512, Test 1a Visual inspection No physical damage	No defect would impair normal operation

4.3 Mechanical

Item	Test Condition	Requirement
Durability	OCP UQD Std. & ISO 18869 0 psi, speed: 1,200mm/min.	No defect would impair normal operation 5,000 times
Coupling Force	OCP UQD Std. & ISO 18869 0 psi and 100 psi, speed: 1,200mm/min.	0 psi, follow test result 100 psi, follow test result
Fluid Loss Requirement	OCP UQD Std. & ISO 18869 0 psi and 100psi	SQD02: < 0.020ml, SQD04: < 0.025ml SQD06: < 0.035ml, SQD08: < 0.070ml
Maximum operating pressure	OCP UQD Std. & ISO 18869 >100psi, no issue	Passed > 100psi; then the functional be work
Minimum burst pressure	OCP UQD Std. & ISO 18869 >300psi	Passed > 300psi
Minimum Cv	OCP UQD Std. & ISO 18869 Water, 15.6℃, Plug to Socket, Socket to Plug	SQD02: > 0.25, SQD04: > 0.80 SQD06: > 1.60, SQD08: > 2.50
Flow Rating	OCP UQD Std. & ISO 18869 Water, 15.6℃,, Flow for a speed of 5 m/s, 1Bar	SQD02: > 0.55 GPM, SQD04: > 1.7 GPM SQD06: > 3.0 GPM, SQD08: > 4.7 GPM
Random test	ALTW internal Random test, each brand, socket & plug (0psi)	Follow test result (SQD04 Only)

4.4 Environmental

Item	Test Condition	Requirement
Thermal cycling	ALTW internal -40°C~ 120°C, 180cycles (30 days, 6 cycles/day), mated	No defect would impair normal operation
Salt Spray	ISO 18869 5% salt solution for 72 hours	No physical damages and Meet OCP Cv requirement.

5. Product Qualification Test Sequence

	Test or Examination	Test Group			
		A	B	C	D
		Test Sequence			
Examination of product	Visual Examination	1, 7	1, 10	1,5	1,5
OCP requirement testing	Durability (5,000 times) Test	4			
	Mating Force Test (0 psi, 100psi)	3, 5		3	
	Fluid Loss Requirement (0psi and 100 psi)	2, 6			
	Maximum operating pressure		2, 8		
	Minimum burst pressure		9		
	Minimum Cv (Water, 15.6℃)		3, 7	2,4	2,4
	Flow Rating (Water, 15.6℃)		4, 6		
	Random test, each brand, socket & plug (0psi)			3	
Environmental	Salt spray, 72hrs				3
	Thermal cycling		5		
	DUT sample Qty:	**6**	**12**	**3**	**6**

6. Quality Assurance Provisions

Unless otherwise specified, in the contract or purchase order, we will be responsible for the quality of the part as it is delivered to client. We will be responsible for having controlled processes to ensure product is in total compliance with this specification. Failing lots shall be subject to return or other corrective action.

Re-qualification Testing

If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

Our products perform per the specification and criteria described in this document; any usage outside and/or deviating from the specification and criteria described in this document, and/or any alteration, modification, transformation, and application not mentioned in this document must be checked and agreed with ALTW in prior. Failure to check and get our agreement, ALTW will bear no responsibility for any consequence that might arise. It is strongly advised to always check with ALTW for any product application not mentioned in this document and/or applications that need clarifications.