



QDC for ePTO

Modular SLIM Air Blast Cooling System



ENGINEERING YOUR SUCCESS.

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Offer of Sale

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Introduction

One Stop Shop for Thermal Management

Complex new technologies and components are needed to electrify trucks.

Only compact and modular solutions will resolve the challenges for on-road and off-road trucks with work functions when designing next generation electric vehicles.

Here Parker has the reliable and efficient integrated solution for you. The Water Glycol QDC cooling system is designed to integrate with Parker’s highly efficient GVM Motor in combination with Parker’s GVI Inverters.

This is coupled with an extensive range of hydraulic pumps and filtration. Further design simplification allows integration of other components from Parker’s broad breath of products including, the IQAN control system and integrated sensors.



Challenges

- Space is limited
- ePTO must fit in varied and complex application
- Risk of lifetime reduction, using truck cooling system for ePTO cooling
- Input of pollution and or air
- Harsh condition
- Complexed cooler and pump sizing





Benefits

- System tailored to Parker components.
- Slim design
- Plug and run solution
- Optimized for air free operation
- Heavy brackets
- Fit for rubber dumper
- Ports for sensors and ventilation



Introduction

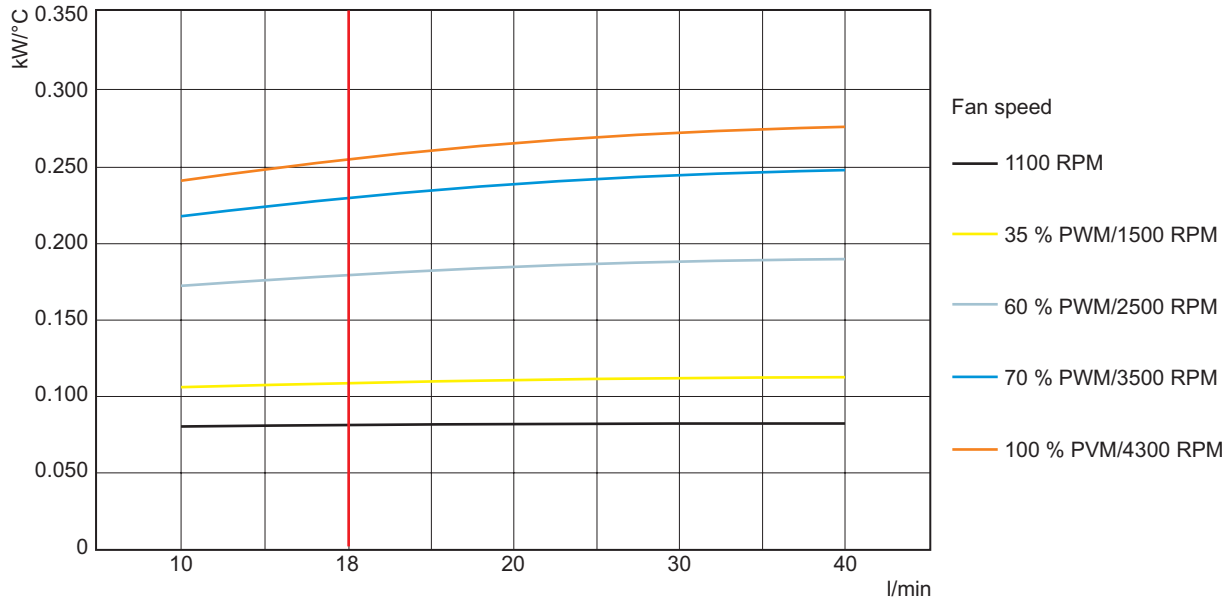
QDC 006 Technical Data

	QDC 006	QDC 006 (S)	QDC 006 (L)	QDC 006 (T)
System	—	Standard pump & tank	Large pump & tank	Only tank
24 VDC	5847006001	5847006500	5847006501	5847006502
12 VDC	5847006002	5847006520	—	5847006522
				

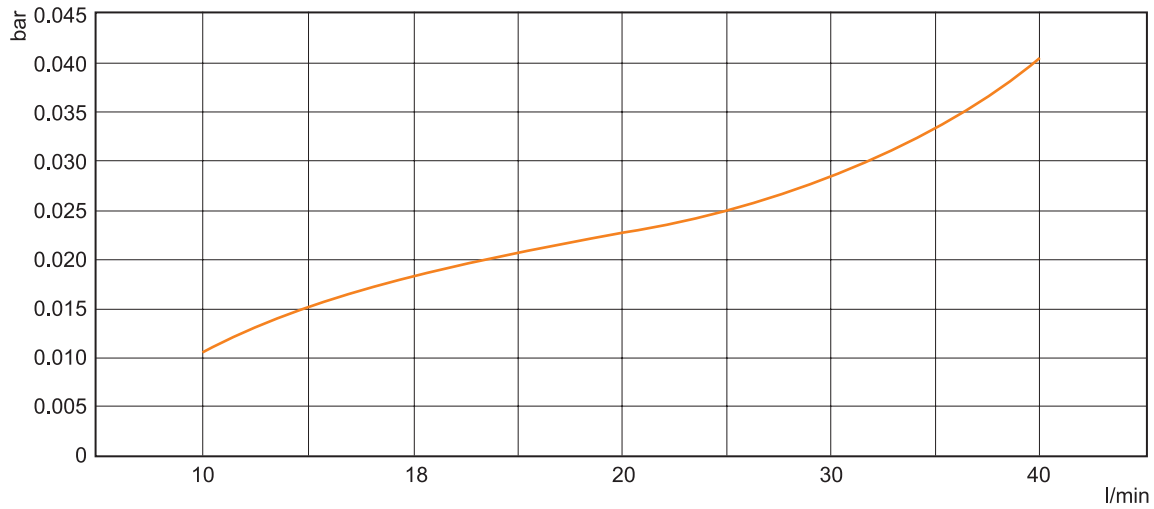
	5847006001	5847006002	5847006500	5847006520
Pressure drop [bar]	0.18 at 100 l/min water Glycol 50 % at 30 °C	0.18 at 100 l/min water Glycol 50 % at 30 °C	0.04 at 40 l/min water glycol 50 % at 30 °C	0.18 at 100 l/min water Glycol 50 % at 30 °C
Max. cooling capacity [kW/°C]	0.29 with water glycol mix 50 % at 4300 rpm at 100 l/min	0,255 with water glycol mix 50 % at 4000 rpm at 100 l/min	0.277 with water glycol mix 50 % at 4300 rpm at 40 l/min	0,24 with water glycol mix 50 % at 4000 rpm at 100 l/min
Connection thread size	G 1/2 and G1/4 Sensoric, G 3/4 Inlet and Outlet, G1/4 bleed port			
Configuration	QDC liquid cooler	QDC liquid cooler	With tank and pump	With tank and pump
Size	006			
Input voltage [VDC]	24	12	24	12
Product type	QDC-006-B-0-00-01X-F-0-0-0-0	QDC-006-A-0-00-01X-F-0-0-0-0	QDC-006-B-0-ST-01X-F-0-0-0-2	QDC-006-A-0-ST-01X-F-0-0-0-2
For fluid type	Water Glycol Mix 35 % - 50 %			
Maximum flow rate [l/min]	100	100	40	40
Minimum flow rate [l/min]	5	5	6.7	6.7
Max. operating pressure [bar]	14	14	1.0	1.0
Min. operating pressure [bar]	0.05			
Max. operating temperature [°C]	95	95	85	85
Min. operating temperature [°C]	-40			
Volume [L]	1.2 matrix	1.2 matrix	4.1 QDC006 system	3,7L QDC006 system
Power supply voltage [VDC]	16 .. 30	9 .. 16	16 .. 30	9 .. 16
Signal input [VDC]	PWM or 0 - 10			
Maximum noise level [dB(A)]	78 at 1 meter at 4300 rpm	76 at 1 meter at 4000 rpm	78 at 1 meter at 4300 rpm	76 at 1 meter at 4000 rpm
Fan rated speed [rpm]	1100 - 4300	100 - 4000	1100 - 4300	100 - 4000
Current [A]	15.3 at 4300 rpm	27 at 4000 rpm	15.3 at 4300 rpm	27 at 4000 rpm
Height / length / width [mm]	450 / 281 / 190	450 / 281 / 190	550 / 281 / 210	552 / 283 / 212
Weight [kg]	10	10	14	14

	5847006501	5847006502	5847006522
Pressure drop [bar]	0.1 at 70 l/min water glycol 50 % at 30 °C	0.18 at 100 l/min water glycol 50 % at 30 °C	0.18 at 100 l/min water glycol 50 % at 30 °C
Max. cooling capacity [kW/°C]	0.29 with water glycol mix 50 % at 4300 rpm at 70 l/min	0,29 with water glycol mix 50 % at 4300 rpm at 100 l/min	0,255 with water glycol mix 50 % at 4000 rpm at 100 l/min
Connection thread size	G 1/2 and G1/4 Sensoric, G 3/4 Inlet and Outlet, G1/4 bleed port		
Configuration	With tank and pump	With tank	With tank
Size	006		
Input voltage [VDC]	24	24	12
Product type	QDC-006-B-0-ST-01X-F-0-0-0-3	QDC-006-B-0-ST-01X-F-0-0-0-1	QDC-006-A-0-ST-01X-F-0-0-0-1
For fluid type	Water Glycol Mix 35 % - 50 %		
Maximum flow rate [l/min]	70	100	100
Minimum flow rate [l/min]	10	5	5
Max. operating pressure [bar]	1.8	14	14
Min. operating pressure [bar]	0.05		
Max. operating temperature [°C]	85	85	85
Min. operating temperature [°C]	-40		
Volume [L]	4.2 L QDC006 system	7.3 L QDC006 system	3,7L QDC006 system
Power supply voltage [VDC]	16 .. 30	16 .. 30	9 .. 16
Signal input [VDC]	PWM or 0 - 10		
Maximum noise level [dB(A)]	78 at 1 meter at 4300 rpm	78 at 1 meter at 4300 rpm	76 at 1 meter at 4000 rpm
Fan rated speed [rpm]	1100 - 4300	1100 - 4300	100 - 4000
Current [A]	15.3 at 4300 rpm	15.3 at 4300 rpm	27 at 4000 rpm
Height / length / width [mm]	550 / 281 / 300	550 / 281 / 210	553 / 284 / 213
Weight [kg]	16	12	12

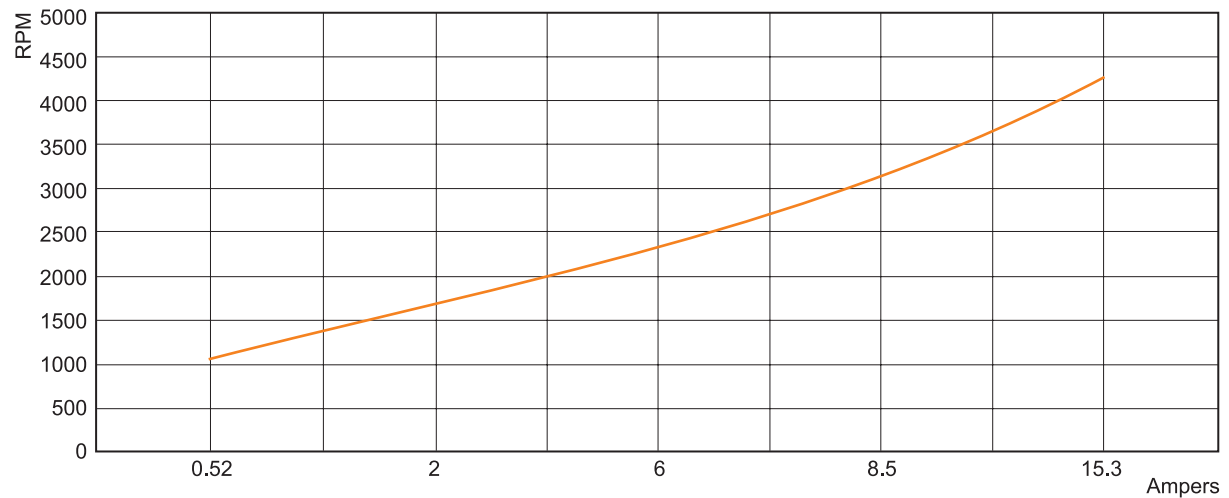
QDC 006 Cooling Capacity W/G 50% (24 V)



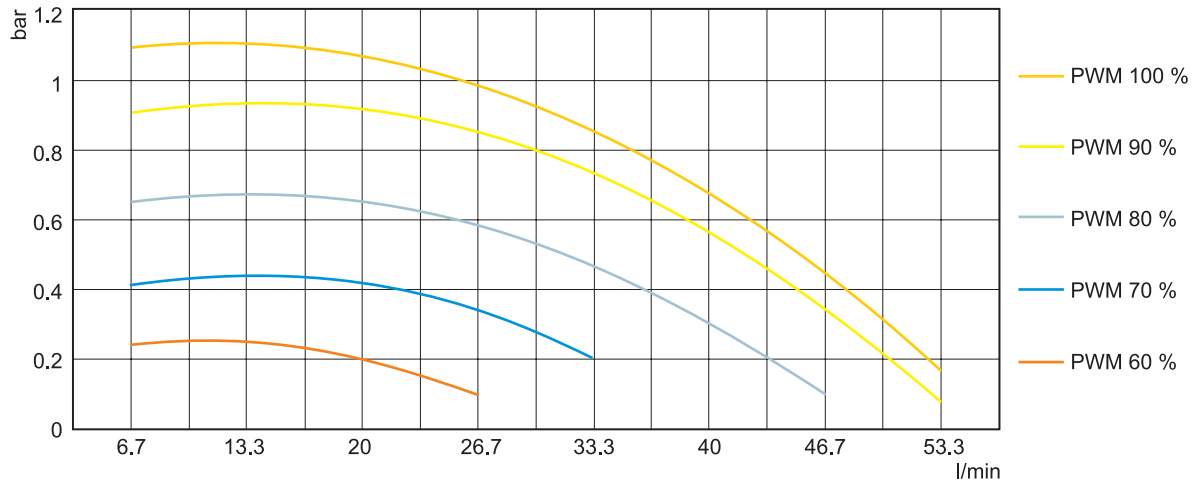
QDC 006 Pressure Drop W/G 50%



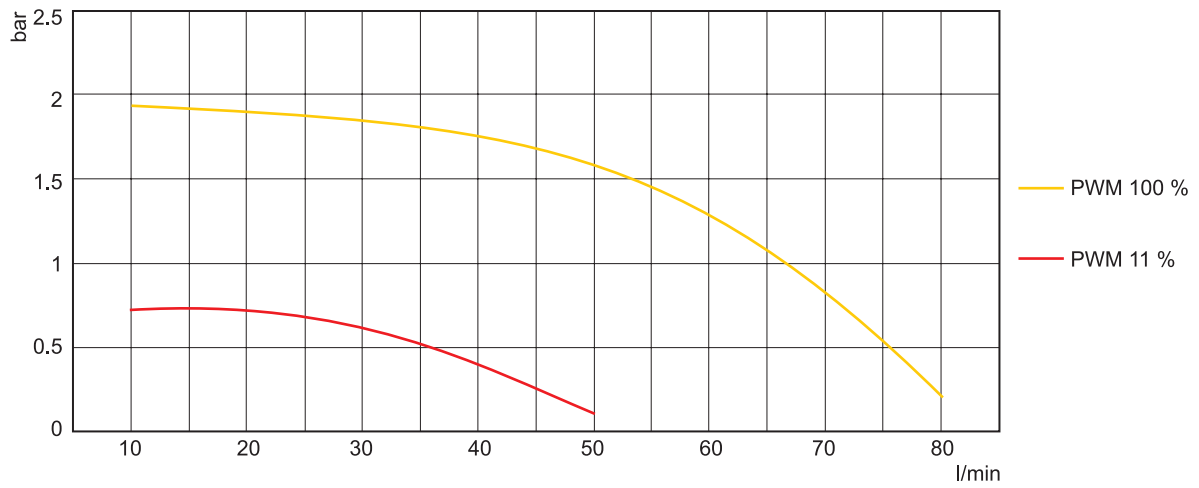
QDC 006 Electrical Current W/G 50% (24 V)



QDC 006 Flow Rate / Pressure Performance, Water Glycol Pump (S)



QDC 006 Flow Rate / Pressure Performance, Water Glycol Pump (L)



Selection Guide

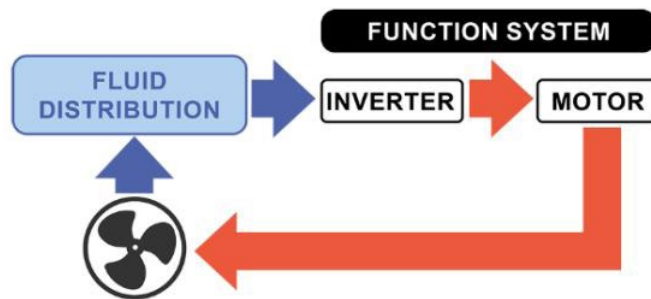
QDC 006

Selection guide for ePTO in serial cooling layout

ePTO GVM and GVI	Rated power [kW]	7,5% Heat losses Rated power [kW]	Required cooling capacity kW/°C at 45°C ambient	Required cooling capacity kW/°C at 40°C ambient	GVM & GVI 18 l/min 1080 l/h pressure drop [bar]	QDC 006 (S) flow & pressure drop	QDC 006 (L) flow & pressure drop
GVM210-50	18.6	1.4	0.052	0.043	0.66	✓	✓
GVM210-100	20.4	1.53	0.056	0.047	0.76	✓	✓
GVM210-150	66.5	5	0.185	0.156	0.86	✓	✓
GVM210-200	77.3	5.8	0.214	0.185	0.96	✓	✓
GVM210-300	77.3	5.8	0.214	0.185	1.16	on request	✓
GVM210-400	170	5.8	0.215	0.185	1.26	not possible	✓
GVM310-125	117	8.77	0.32 *	0.27	0.75	✓	✓
GVM310-200	178	13.35	0.49 *	0.412 *	0.8	✓	✓
GVM310-250	228	17.1	0.63 *	0.53 *	1.05	on request	✓

Pressure drop GVM + GVI + System at 18 l/min

GVM Type	GVM [bar]	GVI G [bar]	Circuit [bar]	Total
210-50	0.4	0.26	0.2	0.86
210-100	0.5			0.96
210-150	0.6			1.06
210-200	0.7			1.16
210-300	0.9			1.36
210-400	1.0			1.46



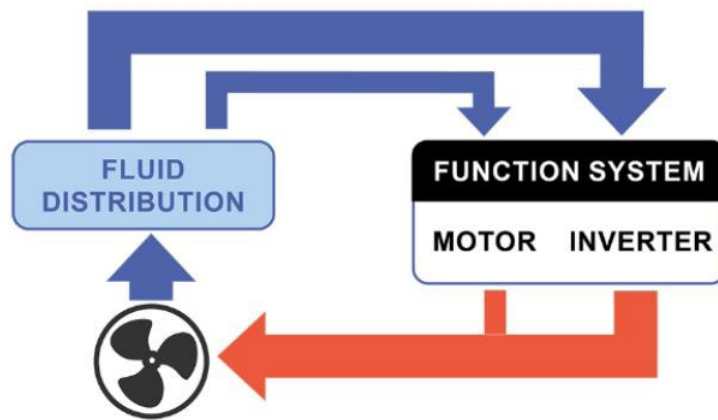
* Approved power supply from the truck of 33 kW / 58 kW depending on the manufacturer / required cooling capacity serial 0.16 kW/°C / parallel 0.24 kW/°C at 45 °C ambient.

Selection guide for ePTO in parallel cooling layout

ePTO GVM and GVI	Rated power [kW]	7,5% Heat losses rated power [kW]	Required cooling capacity kW/°C at 45°C ambient	Required cooling capacity kW/°C at 40°C ambient	GVM & GVI 25 l/min pressure drop [bar]	QDC 006 (S) flow & pressure drop	QDC 006 (L) flow & pressure drop
GVM210-50	18.6	1.4	0.078	0,056	0.4	✓	✓
GVM210-100	20.4	1.53	0.085	0.0612	0.45	✓	✓
GVM210-150	66.5	5	0.278	0.2	0.48	✓	✓
GVM210-200	77.3	5.8	0.323 *	0.232	0.51	✓	✓
GVM210-300	77.3	5.8	0.323 *	0.232	0.57	✓	✓
GVM210-400	170	5.8	0.323 *	0.323 *	0.65	✓	✓
GVM310-125	117	8.77	0.478 *	0.35*	0.5	✓	✓
GVM310-200	178	13.35	0.742 *	0.534 *	0.6	✓	✓
GVM310-250	228	17.1	0.95 *	0.68 *	0.65	✓	✓

Pressure drop GVM + GVI + System

GVM Type	GVM at 10 l/min [bar]	GVI G at 18 l/min [bar]	Circuit [bar]	Flow rate [l/min]	Total
210-50	0.2	0.26	0.2	28	0.46
210-100	0.225				0.46
210-150	0.25				0.46
210-200	0.3				0.5
210-300	0.33				0.53
210-400	0.36				0.56

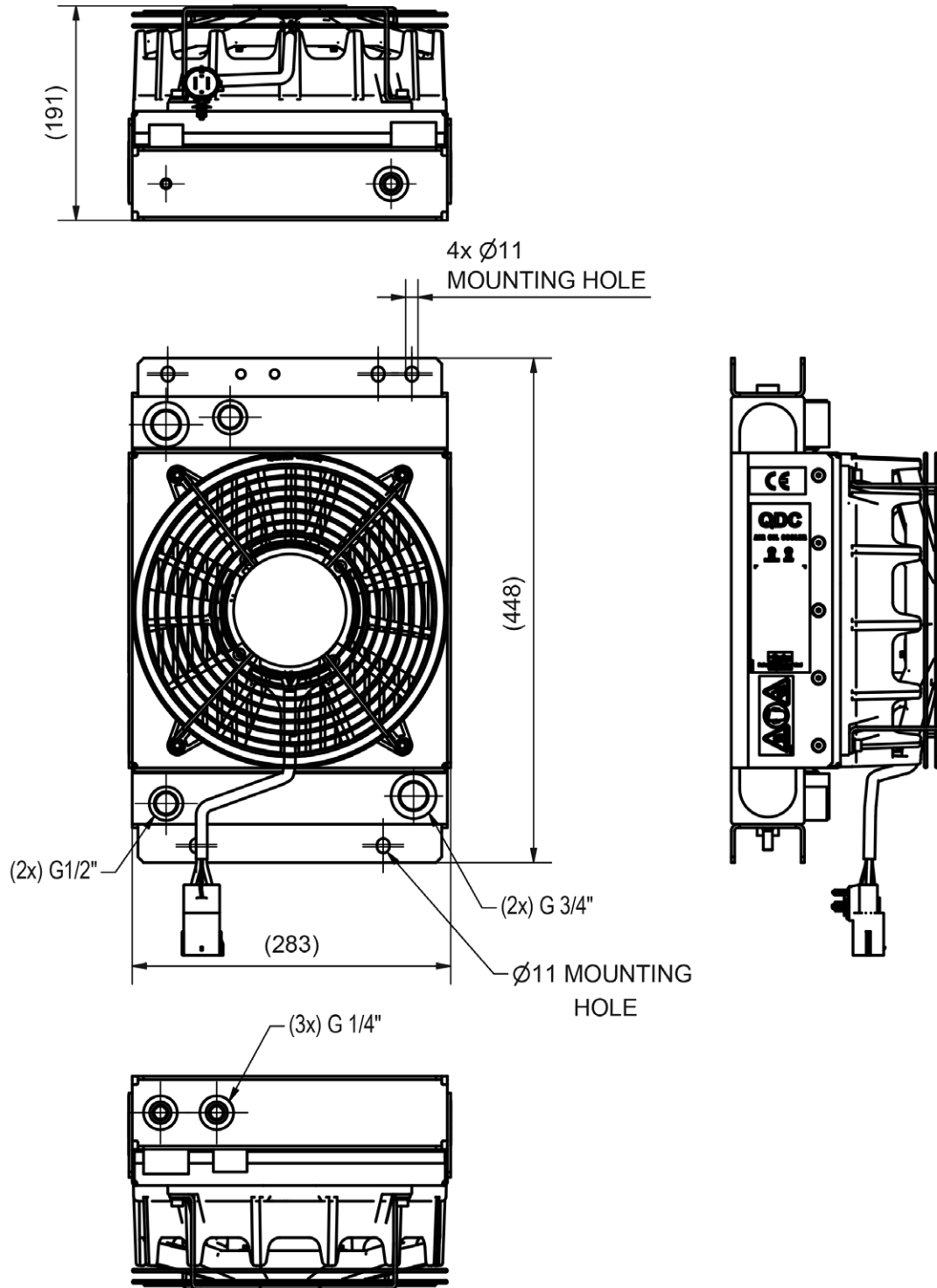


* Approved power supply from the truck of 33 kW / 58 kW depending on the manufacturer / required cooling capacity serial 0.16 kW/°C / parallel 0.24 kW/°C at 45 °C ambient.

Dimensions

QDC 006

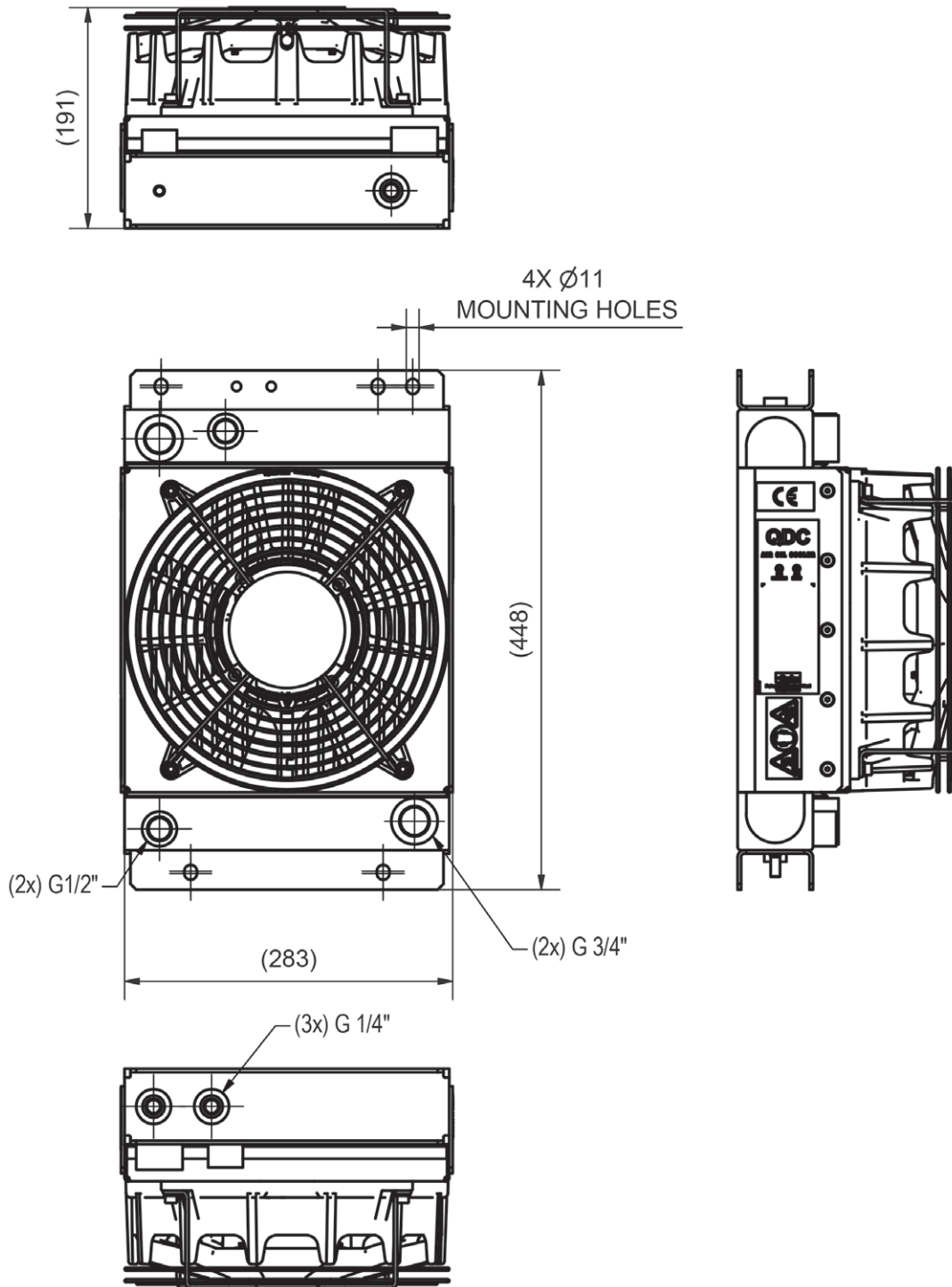
Dimensions QDC 006 (5847006001)



Dimensions

QDC 006

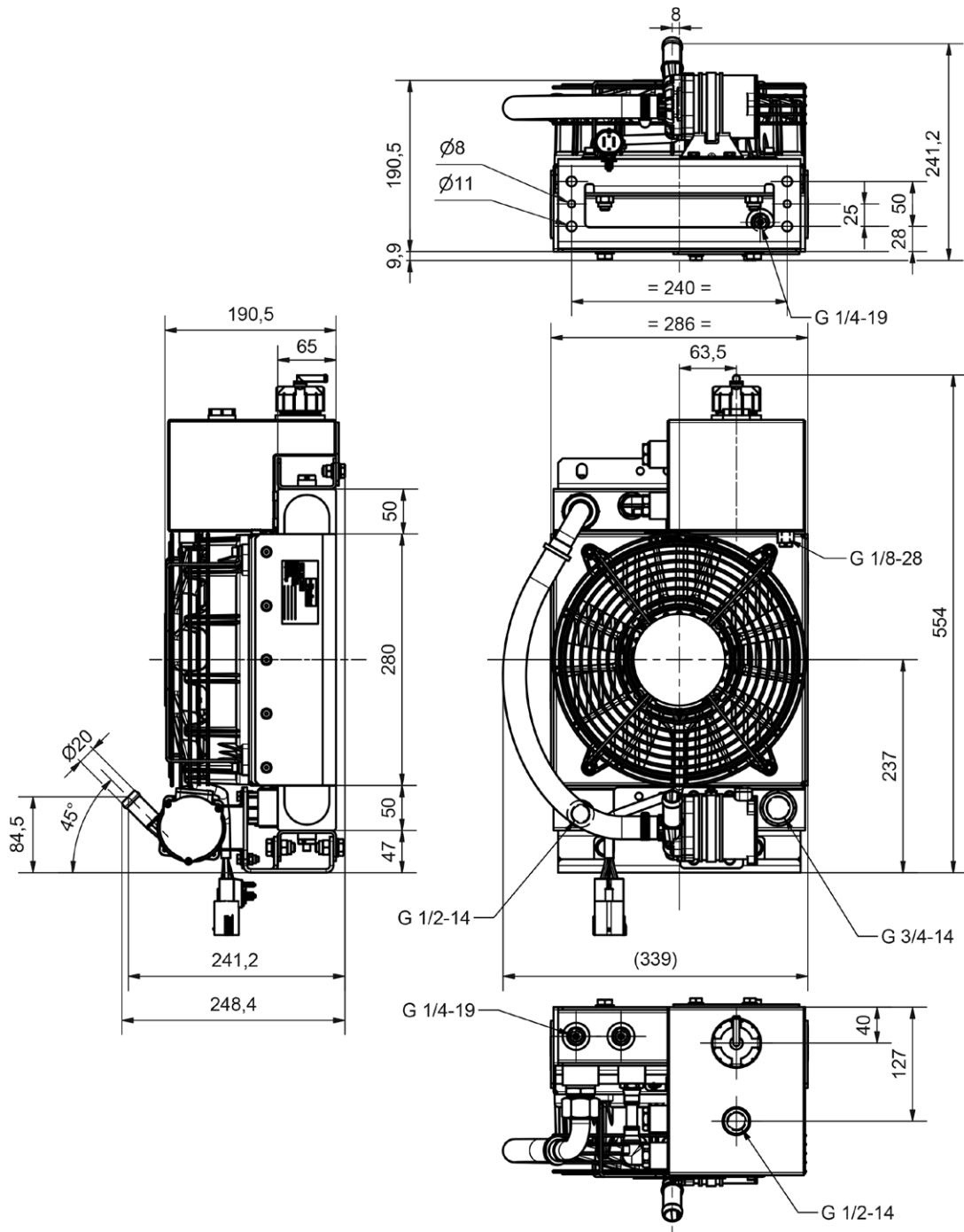
Dimensions QDC 006 (5847006002)



Dimensions

QDC 006

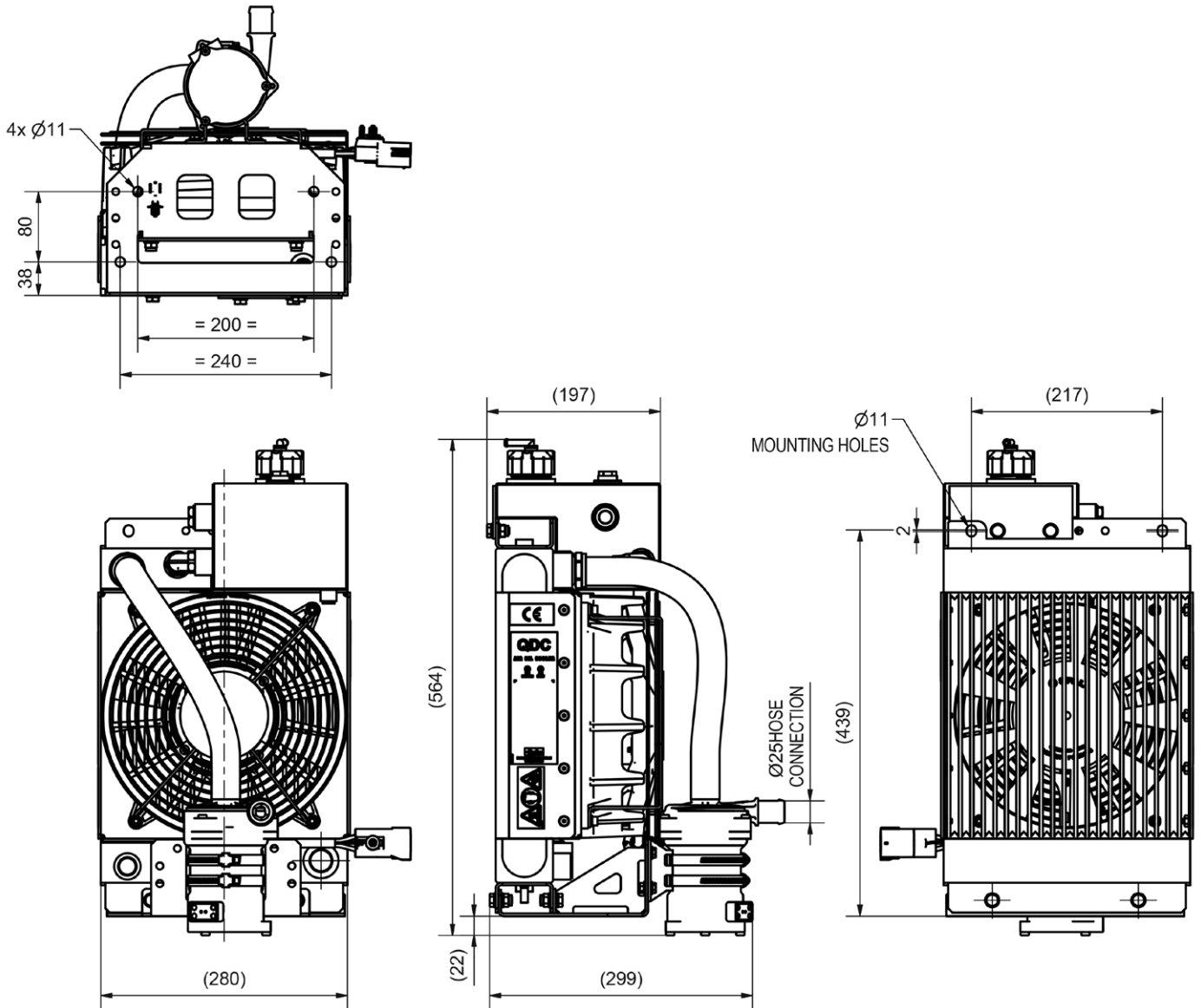
Dimensions QDC 006 (5847006500)



Dimensions

QDC 006

Dimensions QDC 006 (5847006501)

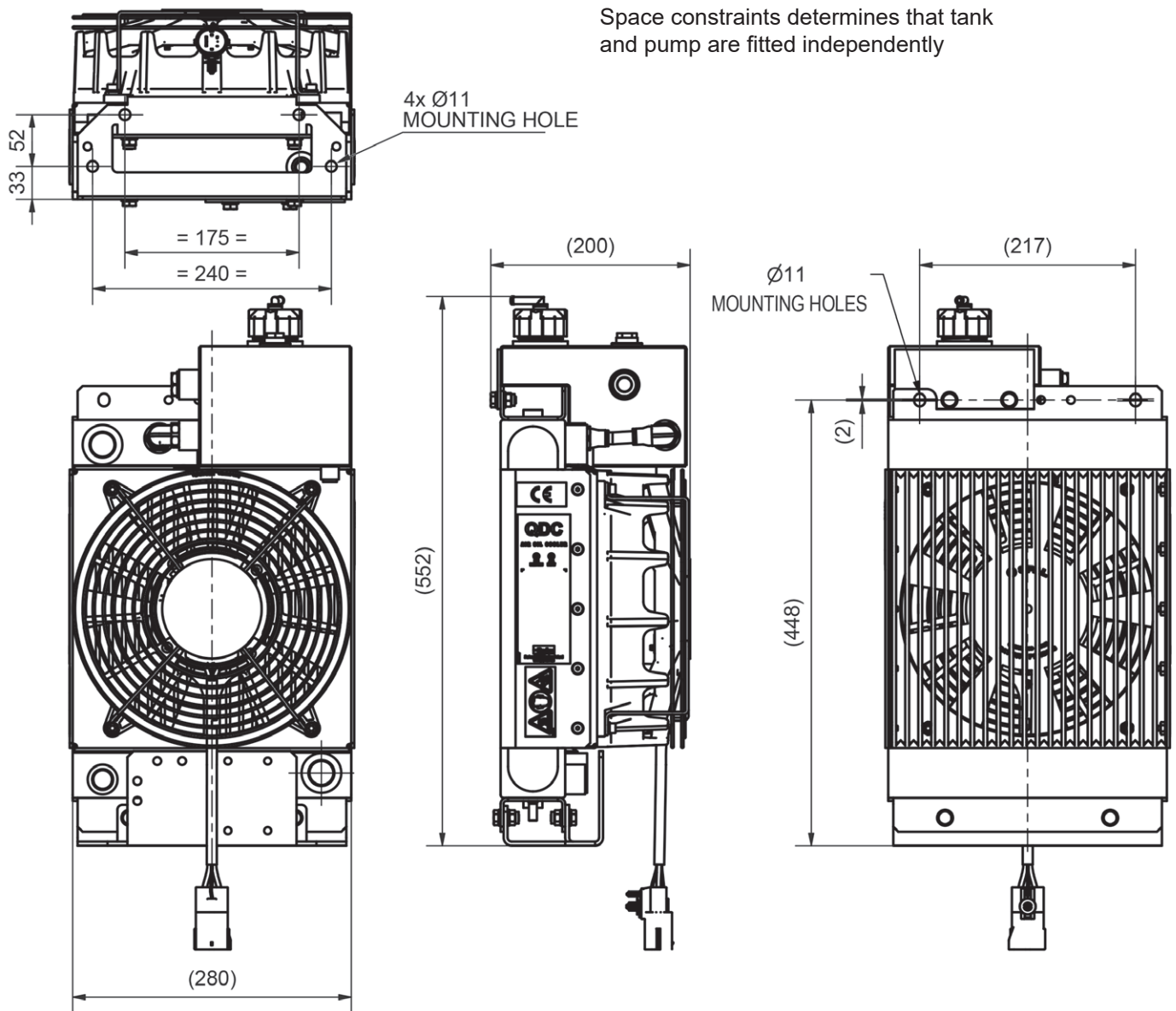


Dimensions

QDC 006

Dimensions QDC 006 (5847006502)

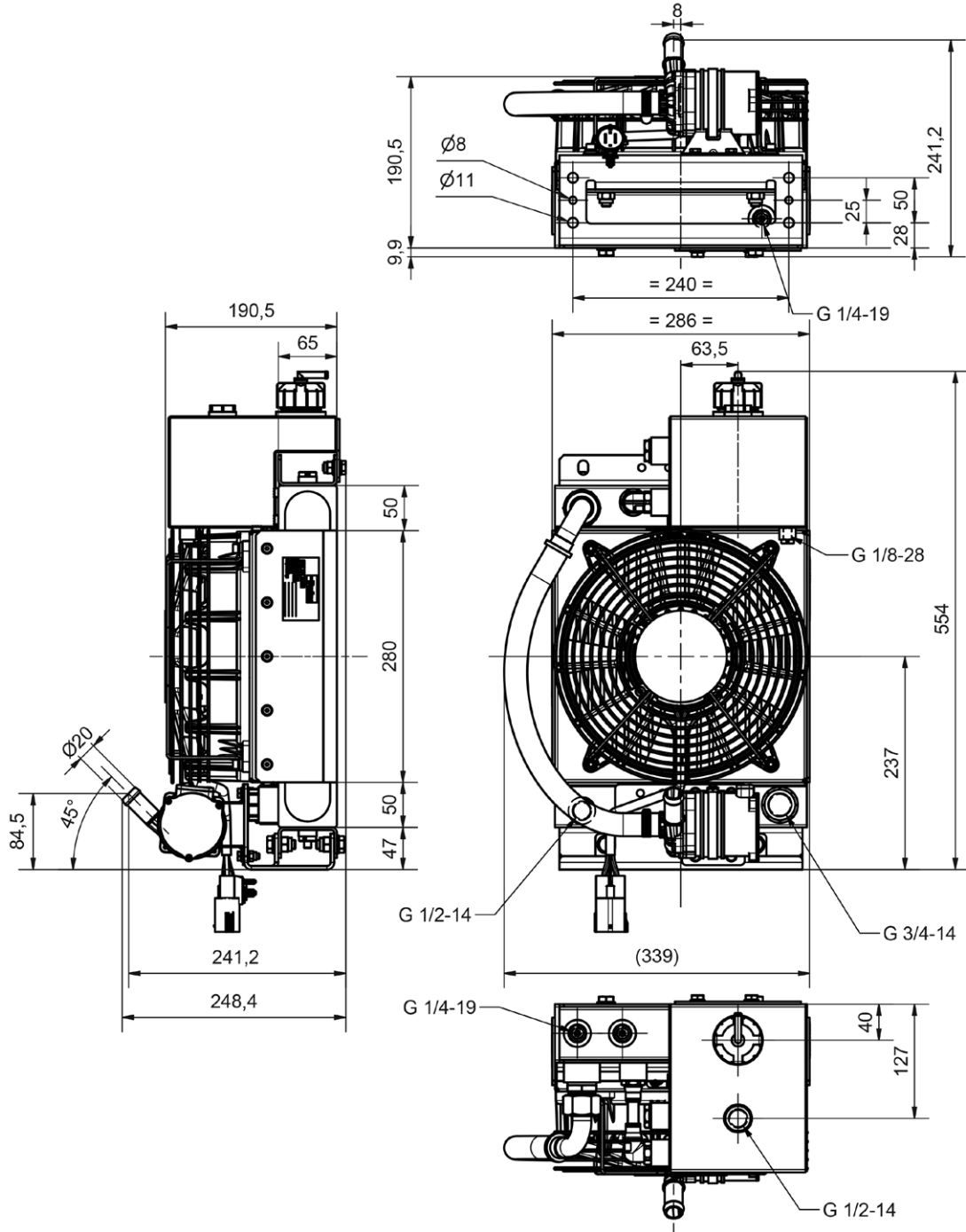
Space constraints determines that tank and pump are fitted independently



Dimensions

QDC 006

Dimensions QDC 006 (5847006520)

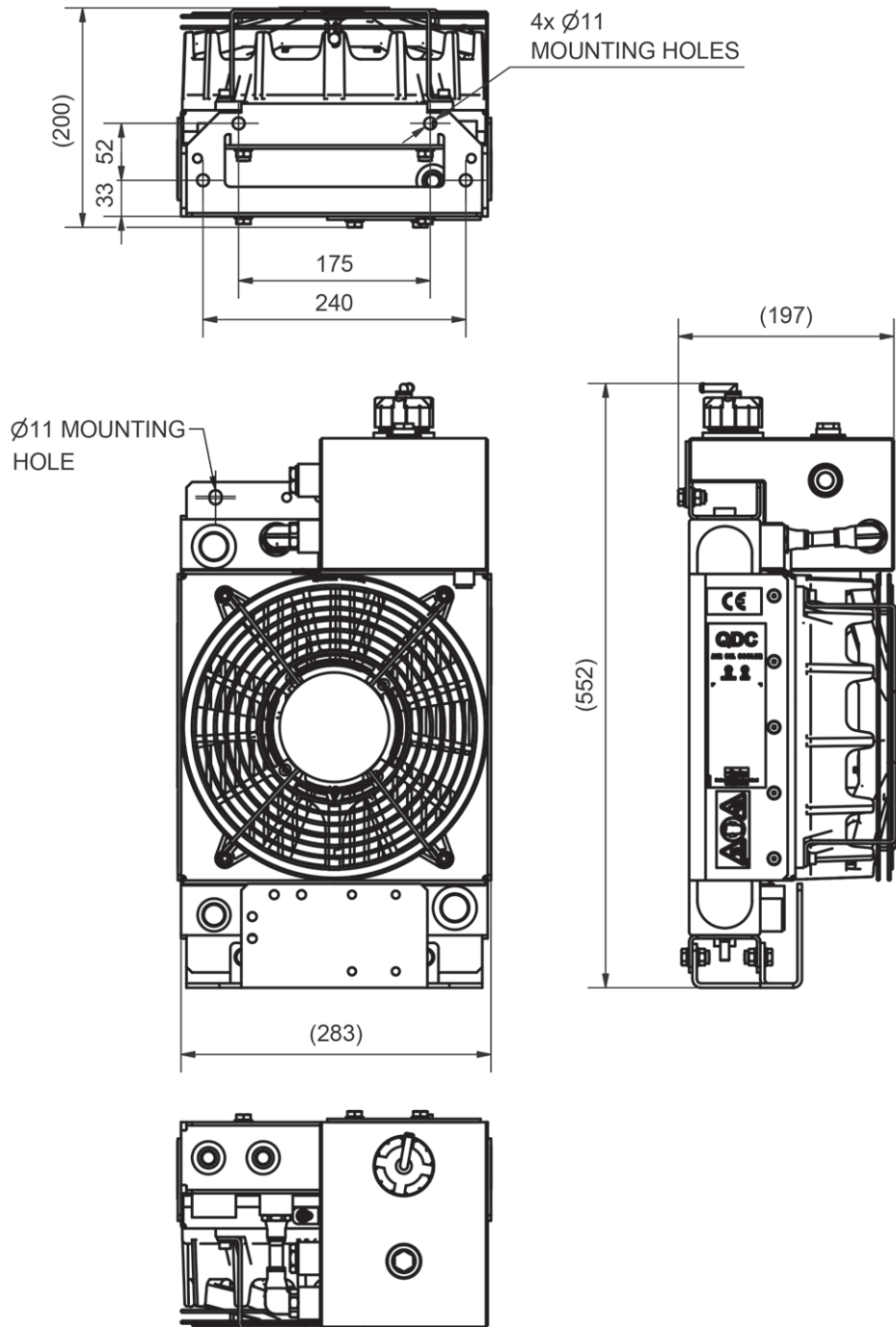


Dimensions

QDC 006

Dimensions QDC 006 (5847006522)

Space constraints determines that tank and pump are fitted independently



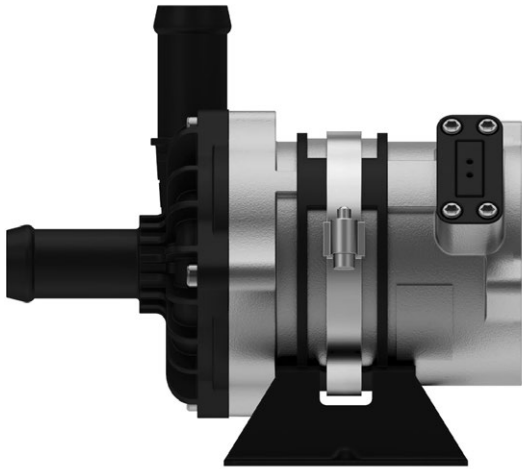
Accessories

Accessories for thermal management architecture

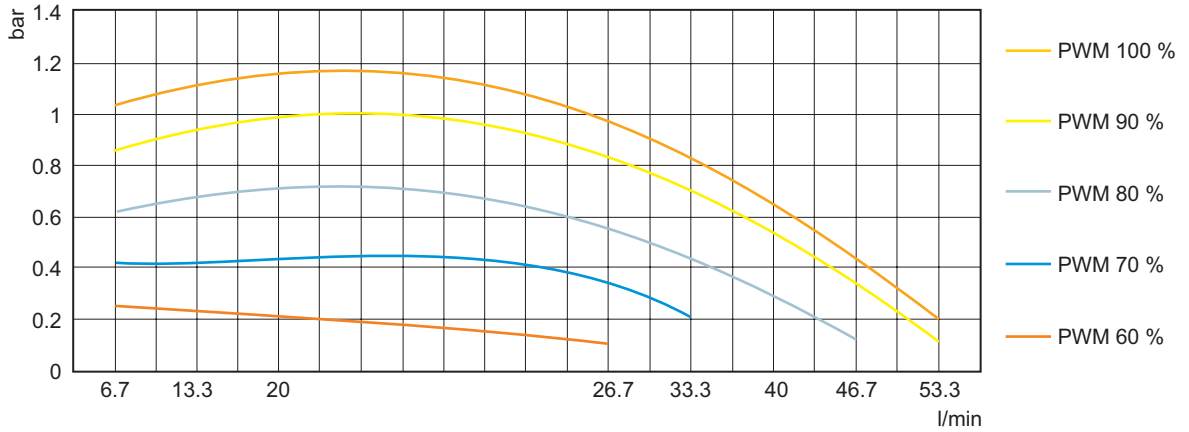
Water glycol pump 12/24VDC high pressure and high flow rate

Type	Article Number
24 V CE & E-Mark	999111
12 V CE	999113

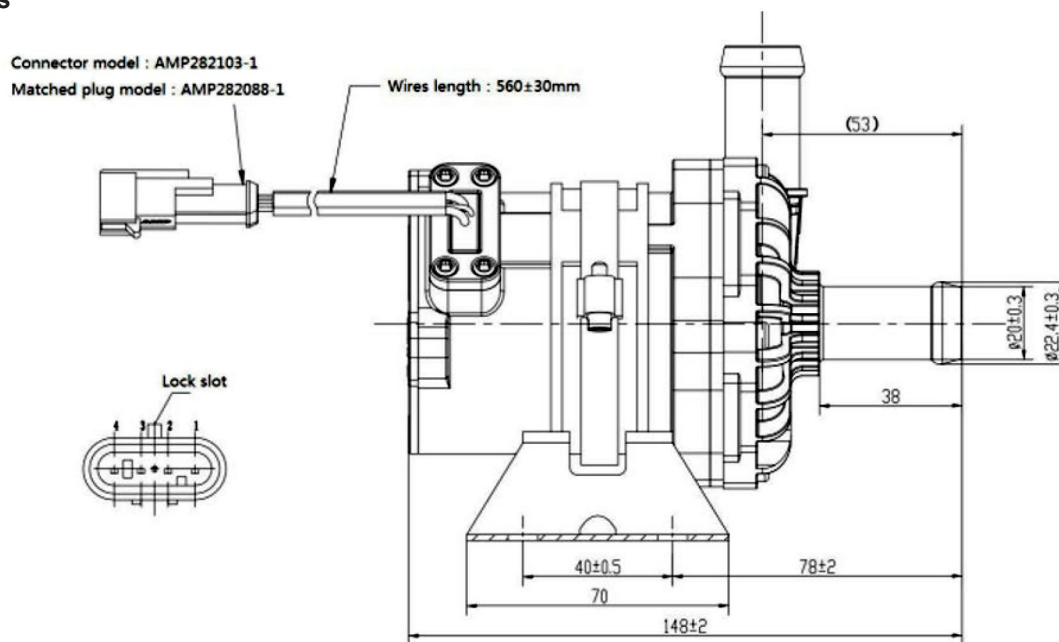
(QPMDC-20-24-20 Standard Pump on QDC006-S)

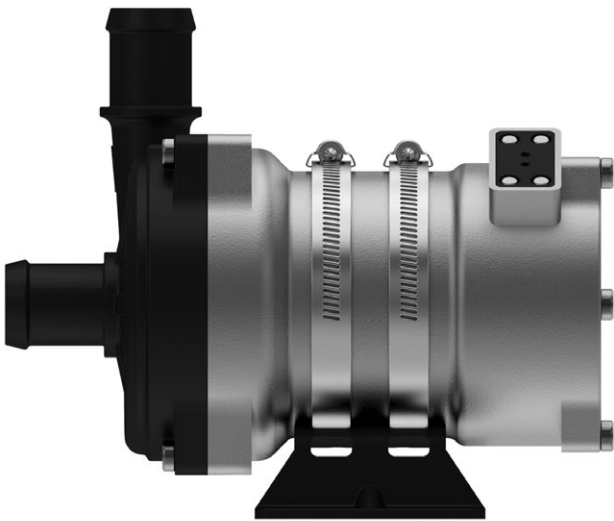


QPMDC 20-24-20



Dimensions

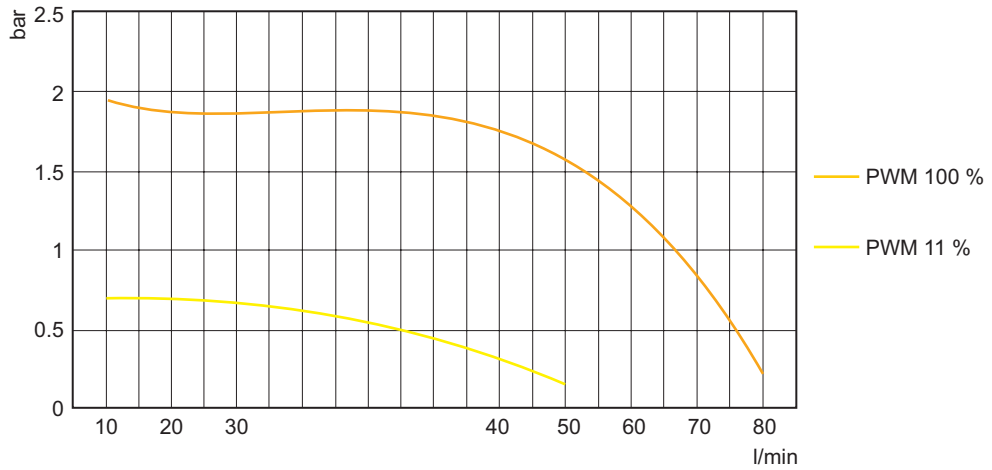




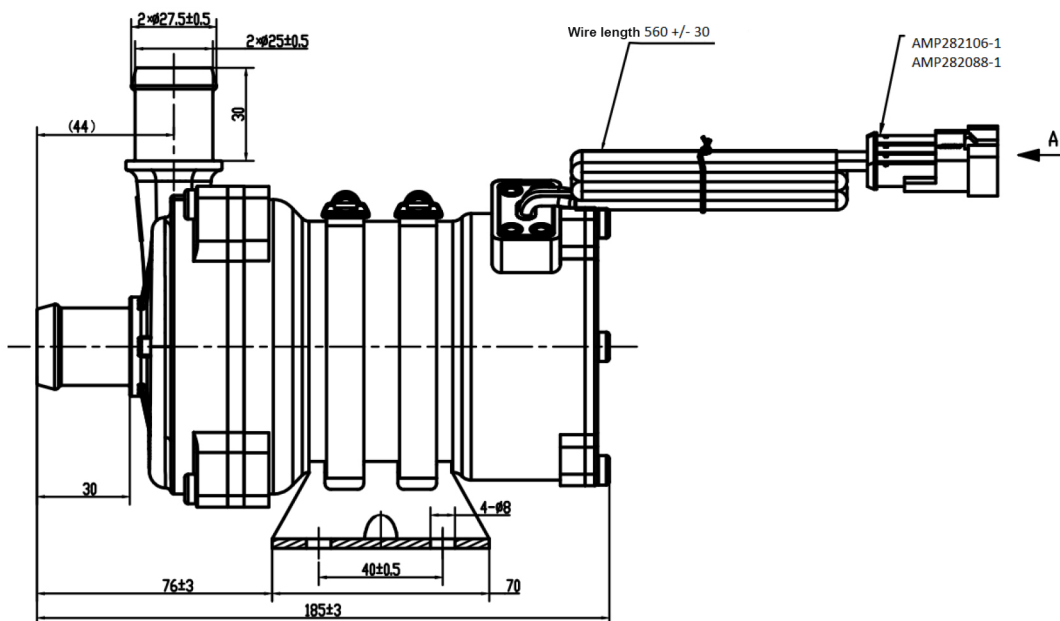
Type	Article Number
24 V CE nozzle 25 mm	999112
24 V CE nozzle 38 mm	999114

(QPMDC-70-24-25 Standard Pump on QDC006-L)

QPMDC-60-24VDC-25



Dimensions



Accessories

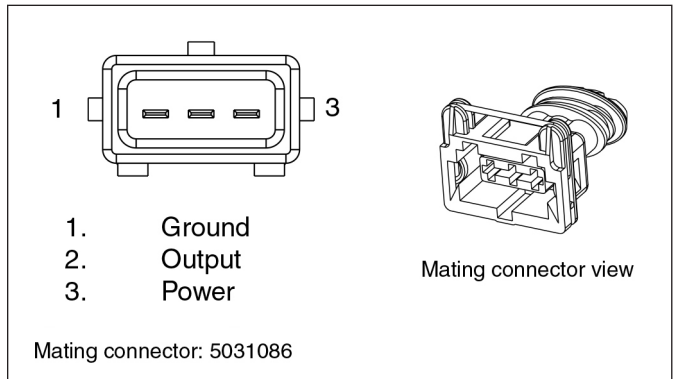
Pressure Sensor 5020026

The IQAN-SP has stainless steel construction for strength. The sensor cells use thin film technology with no internal o-rings or fluid. The high pressure capability makes the sensor very robust and able to withstand vibration.



Characteristics		
Weight	[g]	60
Operating temperature	°C	-40 to 125
Protection		outdoor use
Pressure rating Max	[bar]	100
Pressure rating	[bar]	0-35
G1/4		BSPP
Electrical Connector		AMP JPT
Electrical specifications		
Output at FS3	[VDC]	4.5
Zero output3	[VDC]	0.5
Supply Voltage(Vs)	%	5.0 ±10
VDC4 Current supply	[mA]	Max 12.5 mA
Load resistor Min	[ohm]	5k
Load capacitor Max	[µF]	0.1

Connector Bosch Junior Timer



Accessories

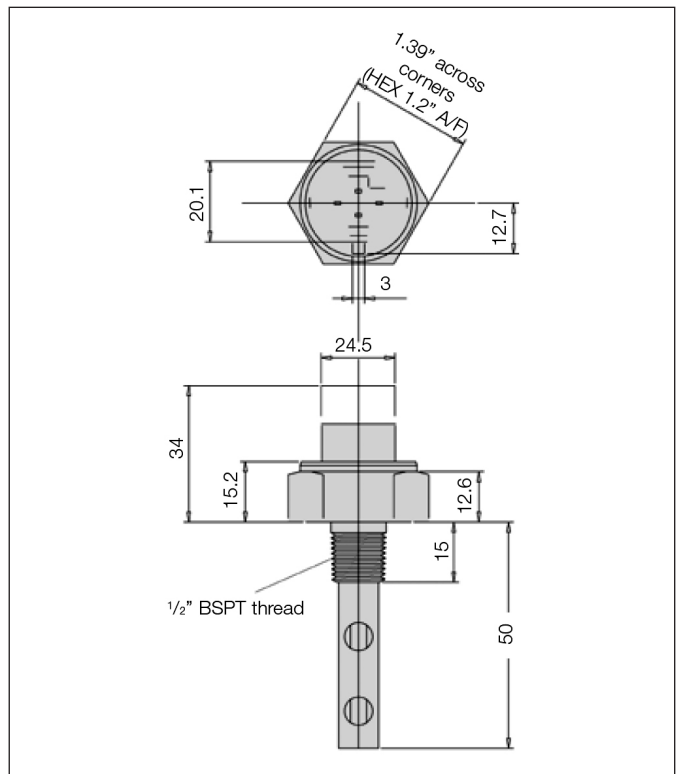
Level Sensor CLS46

The CLS46 Liquid Level Switch is an active device which is designed to give an alarm signal if fluid falls below a preset level. It will only give an output signal after a few seconds of low level to eliminate false alarms due to turbulence. The fact that the CLS46 series has no moving parts and incorporates a built in delay means that it is ideal in applications where mechanically operated switches mis-trigger due to vibration and fluid turbulence.



Electrical rating		
Supply voltage	[VDC]	7-40
Supply current	[mA]	3.0 max. load current: 1.0 A
Alarm delay time	[s]	10.0
Connections		V+: Positive power supply
GND		Negative power supply or GND
Output		Transistor switched to GND on alarm
Body		Connected to ground
Fluid types		Mineral oils / W/G in Validation
Body		Brass
Probe		PTFE
Terminals		SAE CA210 brass, tin plated
Seals		NBR
Environmental ratings max. pressure	[bar]	5.0 (72 PSI)
Temp. ranges: Fluid	[°C]	-40 to +130
Ambient		-40 to +100
Sealing		IP67
Vibration	[g]	6 10-50 Hz (600-3000 rpm)
Shock	[g]	50, 6.3 ms

Dimensions



Accessories

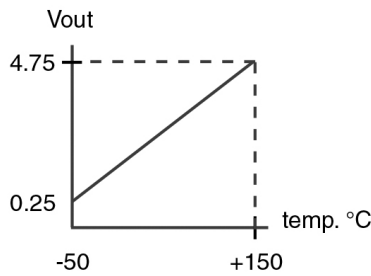
Temperatur Sensor 20073657

The IQAN-ST has stainless steel construction for strength. The PT100 sensor uses thin film technology with internal amplification. All versions of the sensor have high pressure capability. The IQAN-ST is very robust and able to withstand heavy vibrations.

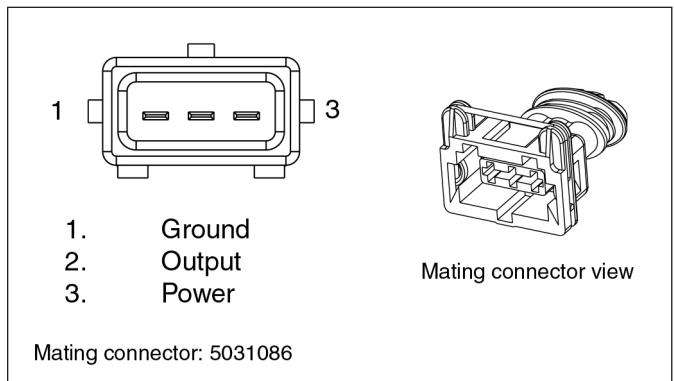


Characteristics		
Weight	[g]	50
Operating temperature	°C	-50 to 150
Protection		Outdoor use
Pressure rating Max		
G (1/4 BSP)	[bar]	700
M (M10)	[bar]	350
U (SAE 6)	[bar]	1000

Temperature vs. output diagram



Connector Bosch Junior Timer

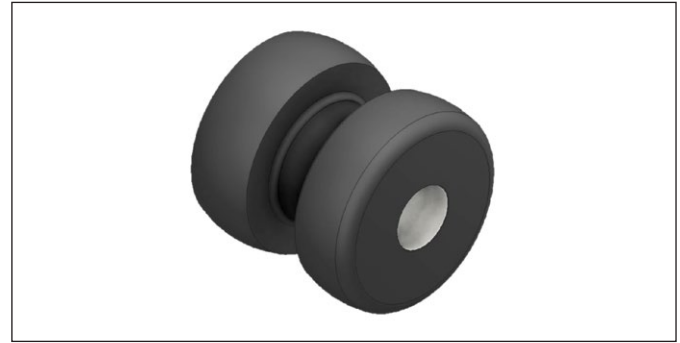


Accessories

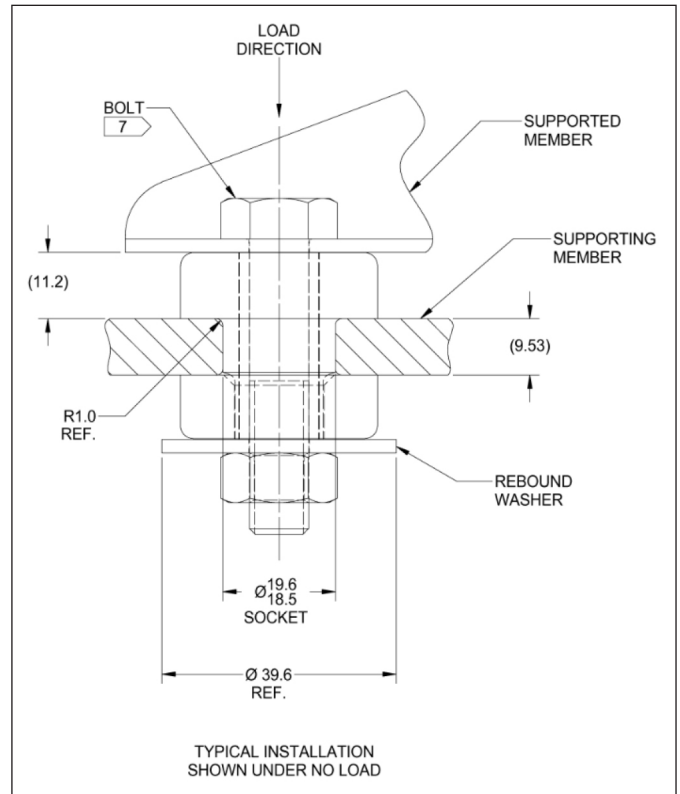
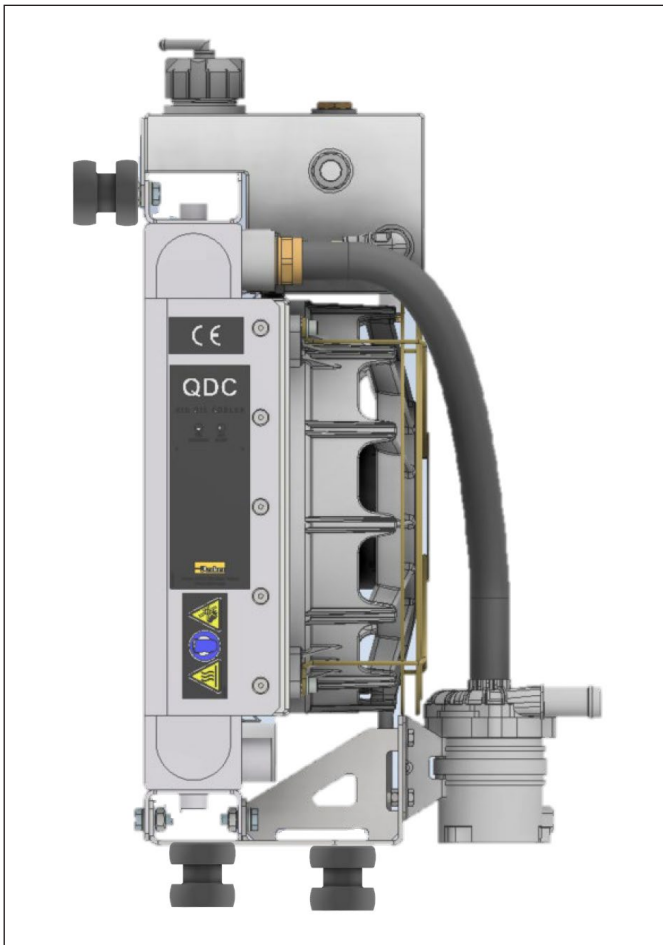
QDC 006

Rubber Damper CB-2201-1

Rubber Damper CB-2201-1 series are designed for applications involving severe dynamic forces in the static load direction, as well as the rebound direction. Travel is limited in both directions by rubber in compression that provides snubbing.



Dimensions





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