

Electric Coolant Pump ECP 160

www.bosch-motorsport.com



- ▶ > 160 l/min at 1.5 bar (g)
- ▶ 926 g (Pump Unit + Electronic Box)
- ▶ Brushless motor
- ▶ PWM speed controlled
- ▶ Spiral housing additive manufactured

The Bosch ECP 160 coolant pump features a PWM controlled BLDC motor. Its main purpose are coolant systems. The supply voltage is 12 V.

Application

Max. differential pressure (el. limited)	<2.4 bar (g)
Delivery rate at 22°C	160 l/min at 1.5 bar (g) (690 W)
Max. delivery rate	<240 l/min
Max. coolant temperature	135°C
Max. ambient temperature	85°C
Max. vibration Pump Unit and Electronic Box	See Vibration Profile 1 on our homepage
Max. dry run time	< 30 s
Duration for pressure build up	< 1,000 ms (from 0 to 160 l/min at 1.5 bar (g) at T_coolant = 95°C)
Coolant compatibility	Automotive coolant fluids

Technical Specifications

Mechanical Data

Size Pump Unit	105 x 90 x 95 mm
Size Electronic Box	110 x 97 x 45 mm
Weight Pump Unit	445 g
Weight Electronic Box	481 g
Weight total	926 g
Protection Classification Pump Unit	IP55
Protection Classification Electronic Box	IP67
Housing Pump Unit and Electronic Box	Aluminum
Intake side	Wiggins clamps 1 ¼"
Pressure side	Wiggins clamps 1 ¼"
Periodically service after 100 operating hours	<ul style="list-style-type: none"> • Maintenance of Pump Unit • See also maintenance list
Periodically service after 200 operating hours or after 2 years	<ul style="list-style-type: none"> • Functional test of Electronics • See also maintenance list

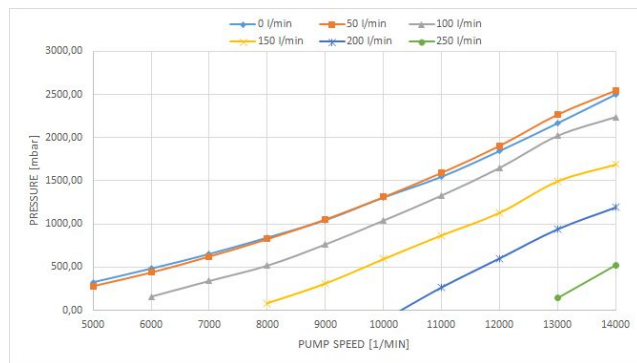
Electrical Data

Supply voltage	9 to 18 VDC
Load current	51.1 A at 13,500 rpm and 1.5 bar (g); 160 l/min (see diagrams)
Max. current	62 A
Max. released short-term power (el. limited)	750 W
Speed control	PWM

Characteristic

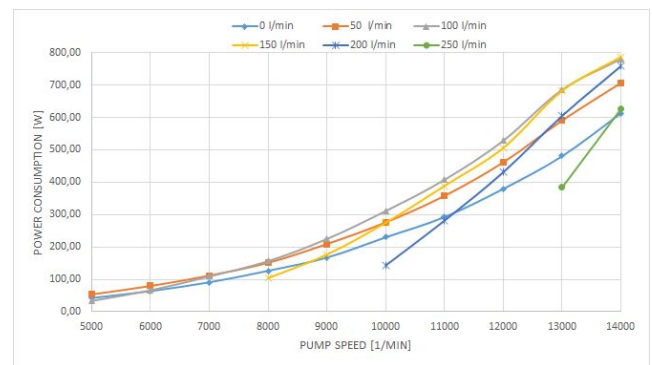
Surface coating	Anodization
Color	Black
Fluid filtering	Possible both sides

Pressure



Pump speed 1/min	Flow rate l/min						mbar
	0	50	100	150	200	250	
5,000	327	281					
6,000	484	438	160				
7,000	653	623	341				
8,000	843	825	519	84			
9,000	1045	1051	764	311			
10,000	1308	1312	1040	594	0		
11,000	1547	1593	1330	869	266		
12,000	1846	1905	1651	1130	603		
13,000	2168	2267	2022	1495	940	144	
14,000	2502	2546	2240	1688	1193	524	

Power Consumption



Pump speed 1/min	Flow rate l/min						W at 13.5 VDC
	0	50	100	150	200	250	
5,000	43	54	34				
6,000	64	80	66				
7,000	91	112	109				
8,000	127	151	156	104			
9,000	168	209	225	177			
10,000	230	276	311	275	143		
11,000	293	358	408	389	282		
12,000	380	462	528	506	431		
13,000	481	591	686	682	605	384	
14,000	613	707	781	787	759	626	

Connectors and Wires

Pin A	Power Supply
Pin B	GND
12 V electrical connector	Souriau 8 STA 0-16-75PN 251 (red)
PWM-Signal	Souriau 8 STA 2-02-05PN (red)
Pin 1	Not connected (NC)
Pin 2	GND
Pin 3	Signal PWM
Pin 4	Not connected (NC)
Pin 5	Not connected (NC)
Mechanical connector intake side	Wiggins clamps W994-20D 1 ¼” Wiggins welding flange W903-B20D 1 ¼” Wiggins connecting sleeve W908-20D 1 ¼”

Mechanical connector pressure side	Wiggins clamps W994-20D 1 ¼" Wiggins welding flange W903-B20D 1 ¼" Wiggins connecting sleeve W908-20D 1 ¼"
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Cable length	500 mm
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Air intake (for dirty environment)	19 mm hose support
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PWM Signal

Frequency	250 Hz
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Voltage	U_{low} 0 to 0.8 V; U_{high} 3.3 to 18 V
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Type of Operation	T _{on} / Duty Cycle	Rotation Speed
Not defined	0 to 0.499 ms / 0 %	-
Stop motor	0.5 to 1.0 ms / 0 to 25 %	0 %
First commutation, not permitted for usage	1.0 to 1.33 ms / 25 to 33 %	0 %
Operation width	1.33 to 2.0 ms / 33 to 50 %	33 to 100 %
Maximum speed	2.0 to 2.5 ms / 50 to 62.5 %	100 %
Not defined	2.501 to 4.0 ms / 62.5 to 100 %	-

Ordering Information

Electric Coolant Pump ECP 160
Incl. Pump Unit and Electronic Box
Order number **F 02U V02 499-02**

Electronic Box

Order number **F 02U V02 500-01**

Pump Unit

Order number **F 02U V02 501-02**

Accessories

Connector Souriau 8STA616-75SN

Order number **F 02U 004 556-01**

Connector Souriau 8STA602-05SN

Order number **F 02U 004 678-01**

Wiggins connectors

One set for one pump:

2 x clamp

2 x welding flange

2 x connecting sleeve

4 x O-Ring

Order number **F 02U V02 502-01**

Clamp

Order number **F 02U 004 503-01**

Welding flange

Order number **F 02U 004 504-01**

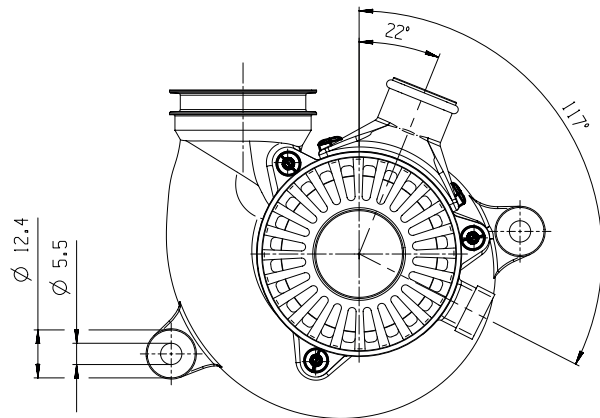
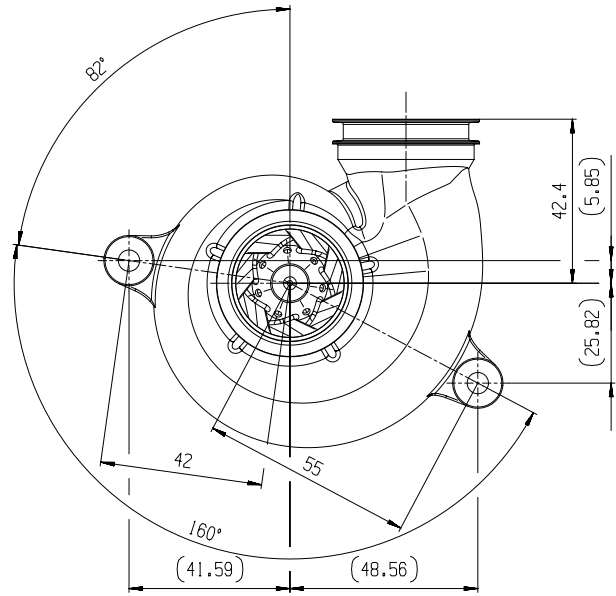
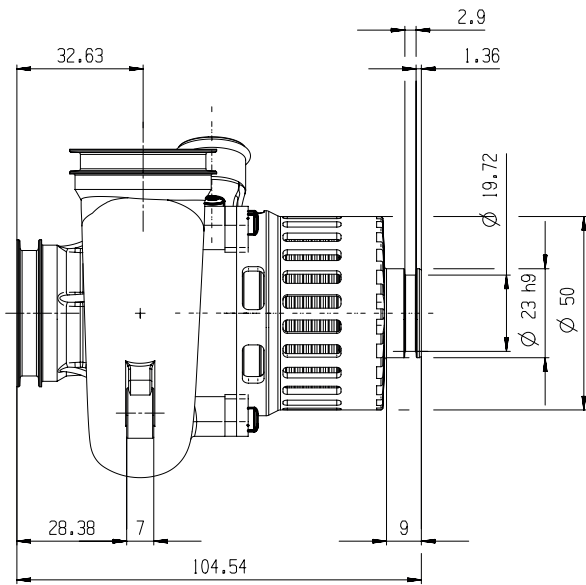
Connecting sleeve

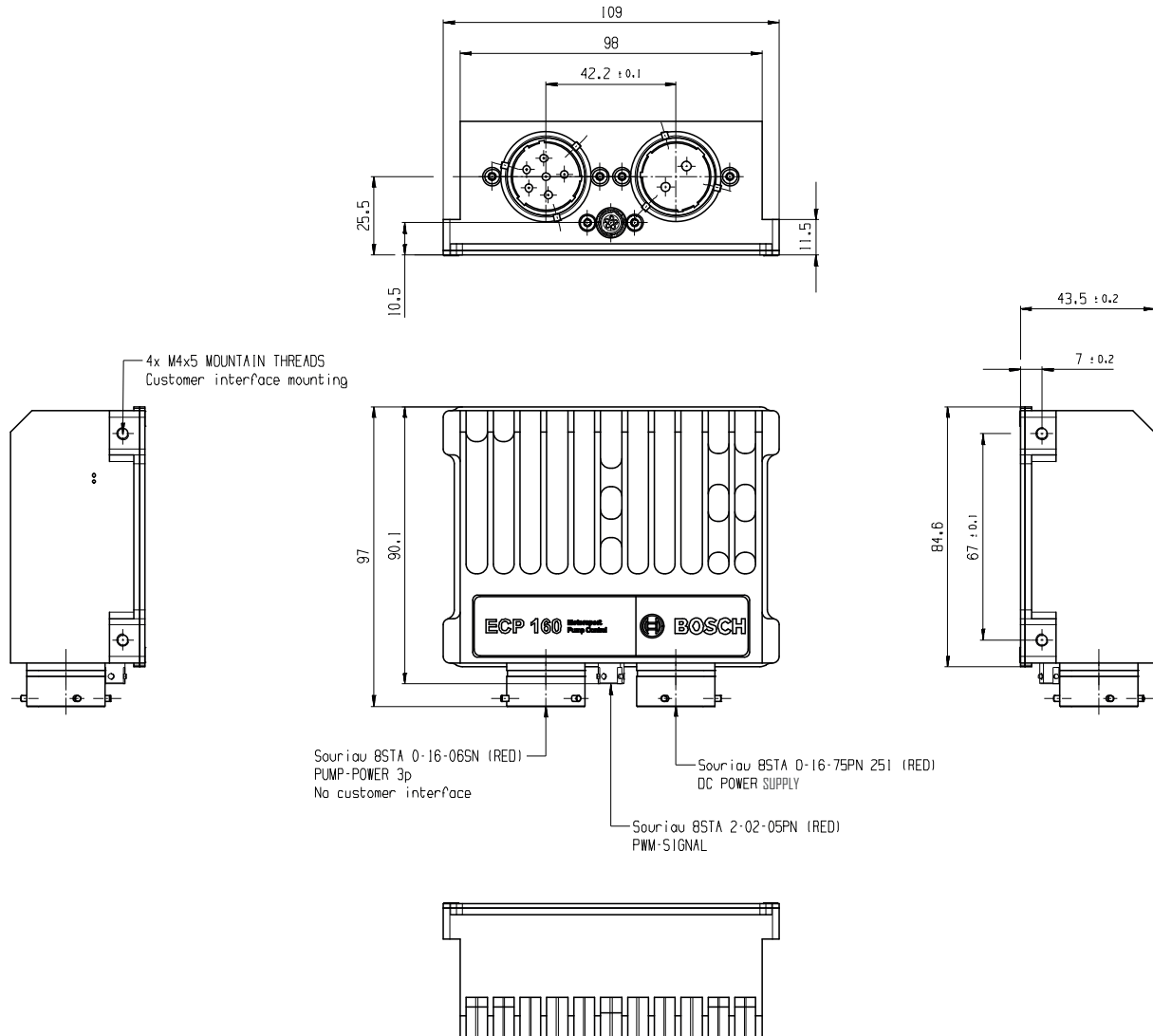
Order number **F 02U 004 502-01**

O-Ring

Order number **F 02U 004 506-01**

Dimensions





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