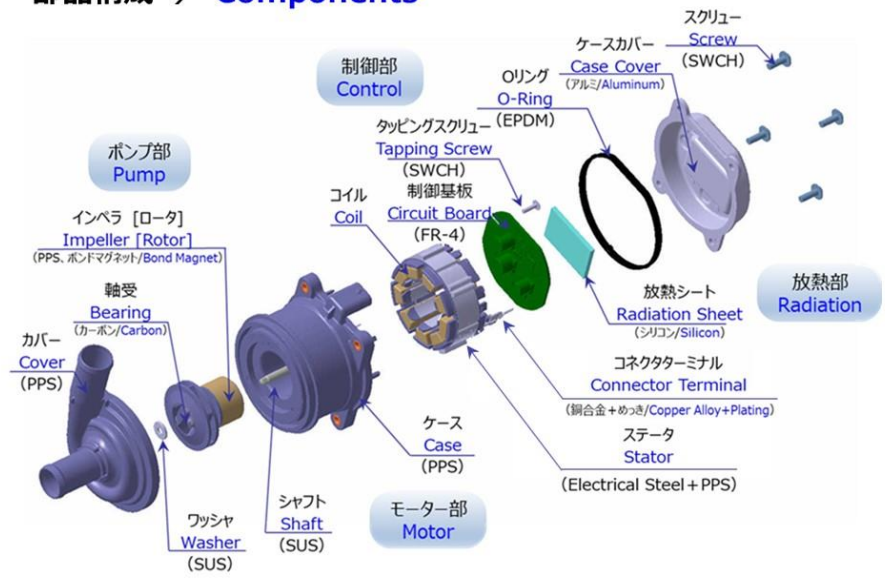


# Electric Water Pump

電動ウォーターポンプ

## 60Wクラス / 60W Type

### 部品構成 / Components



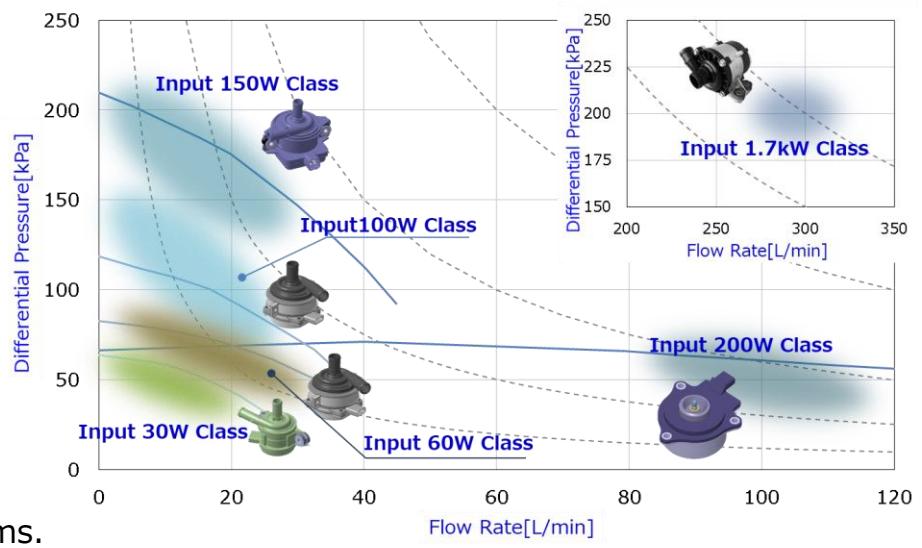
### 機能 / Function

This pump circulates cooling water for water circuit systems. It is used in temperature control systems that require cooling water, including EV systems (to cool motors, inverters, batteries, etc.) and water circulation systems that receiving a command from the ECU, the impeller starts running to control the flow rate to maintain the optimum temperature for the components it serves.

### 特徴 / Features

- Development of electric water pumps with outputs suitable for various needs.
- In-house design of high efficiency impellers

### 当社製品のラインアップ / Line Up



Electric water pump performance characteristics

# Electric Water Pump

電動ウォーターポンプ

## 【30Wクラス】 [30W Type]



作動電圧範囲[V] Working Voltage Range	8 - 16
吐出流量[L/min] Discharge Flow Rate	15(MAX)
差圧[kPa] Differential Pressure	60 - 50
外径寸法[mm] Dimensions	Φ69×L100
質量[g] Weight	330

## 【60Wクラス】 [60W Type]



作動電圧範囲[V] Working Voltage Range	8 - 16
吐出流量[L/min] Discharge Flow Rate	25(MAX)
差圧[kPa] Differential Pressure	80 - 65
外径寸法[mm] Dimensions	Φ75×L112
質量[g] Weight	550

## 【100Wクラス】 [100W Type]



作動電圧範囲[V] Working Voltage Range	8 - 16
吐出流量[L/min] Discharge Flow Rate	30(MAX)
差圧[kPa] Differential Pressure	110 - 70
外径寸法[mm] Dimensions	Φ77×L110
質量[g] Weight	520

## 【200Wクラス】 [200W Type]



作動電圧範囲[V] Working Voltage Range	8 - 16
吐出流量[L/min] Discharge Flow Rate	125(MAX)
差圧[kPa] Differential Pressure	65 - 50
外径寸法[mm] Dimensions	114×147×L 112
質量[g] Weight	1100

# Proposal of Commonality of Core Areas and Interface Specifications

コア領域のコモナリティ化とインターフェース仕様の提案

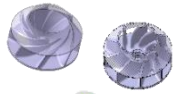
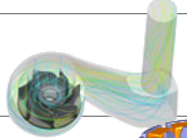
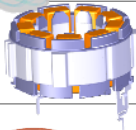




## 特徴 / Features

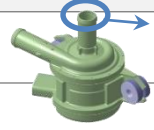


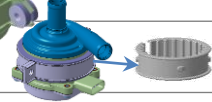
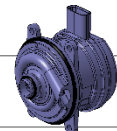


Realize proposals at an early stage by commonizing the design specifications in the core areas to reduce the design lead times.

Also propose interface specifications according to requests (please contact our company).

### Commonality of core areas

Core areas	
<b>Pumps</b>	Impeller design (Vane shape) 
	Volute design (Water channel shape) 
<b>Motors</b>	Stator (Outer diameter) 
	Rotor (Outer diameter, MAG material) 
<b>Control</b>	Circuit design (Hardware) 
	Control design (Software)

### Interface specifications

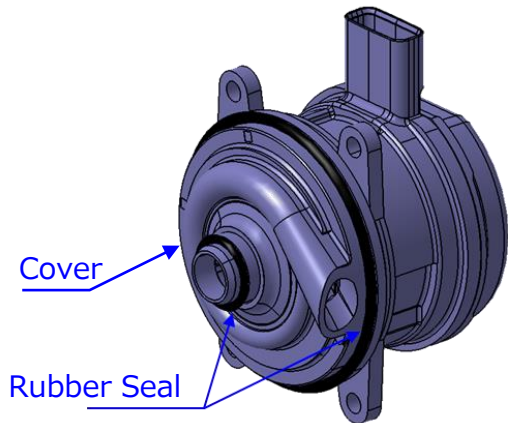
Area	Part	Variations
<b>Mechanical I/F</b>	Cooling water pipe connection	With bulge 
		Direct mounting (Mounting side water channel) 
	Rubber mount (Fixing method)	2-point retention 
		Body retainer + bracket added 
Pump unit	For integrated coolant modules 	
<b>Electrical I/F</b>	Connector connection	Four terminals 
		Three terminals 
	Control signal	PWM
		LIN (or CAN)

# Electric Water Pump Insert Type

組込み式 電動ウォーターポンプ

## 組込み式 / Insert Type

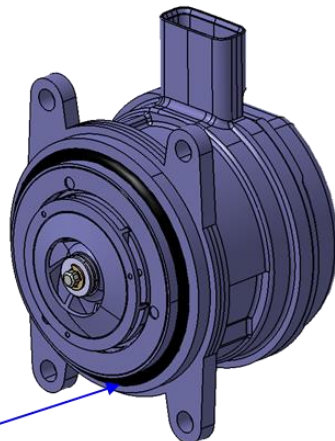
Pump Cover Ver



## 機能 / Function

This pump circulates cooling water for water circuit systems. It is used in temperature control systems that require cooling water, including EV systems (to cool motors, inverters, batteries, etc.) and water circulation systems that receiving a command from the ECU, the impeller starts running to control the flow rate to maintain the optimum temperature for the components it serves.

## Pump Coverless Ver 特徴 / Features



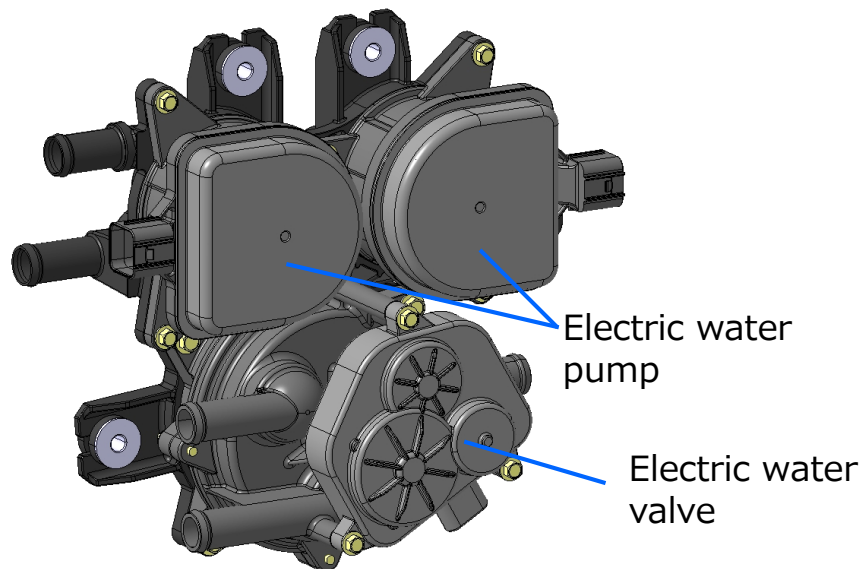
The specification of this pump allows for direct insertion to an inverter and cooling module for conventional pumps.

Eliminating the connections by hoses, forms a lightweight and compact water channel with reduced water channel pressure loss.

# Integrated coolant control module

統合クーラントコントロールモジュール

開発中  
developing



Modules with integrated devices reduce peripheral parts, and improves the space efficiency and assembly efficiency, which contributes to improvement in energy efficiency by reducing various losses through thermal management.

## 機能 / Functions

Thermal management is realized by integrating an electric water pump and electric water valve, which switches the fluid path to efficiently distribute the coolant for controlling the temperatures of batteries mounted in BEVs, drive motors and inverters, etc.

## 特徴 / Features (Application example of thermal management)

3 In - 3 Out 4 pattern structure

