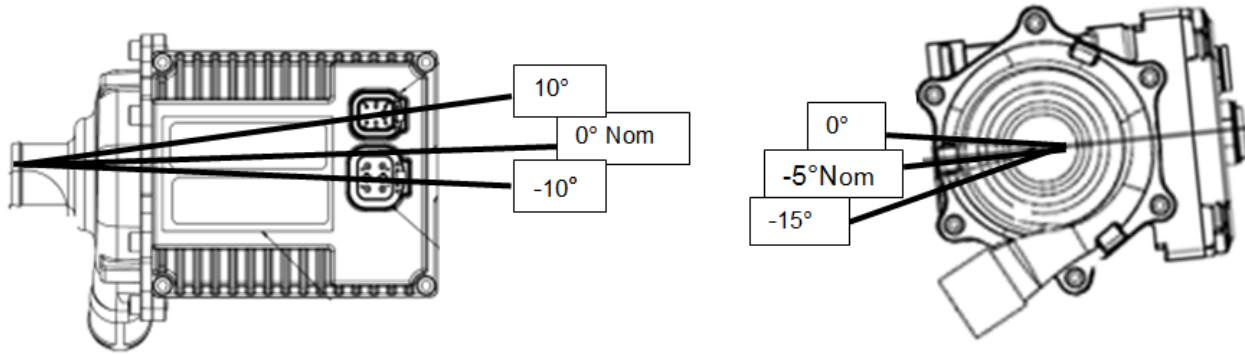


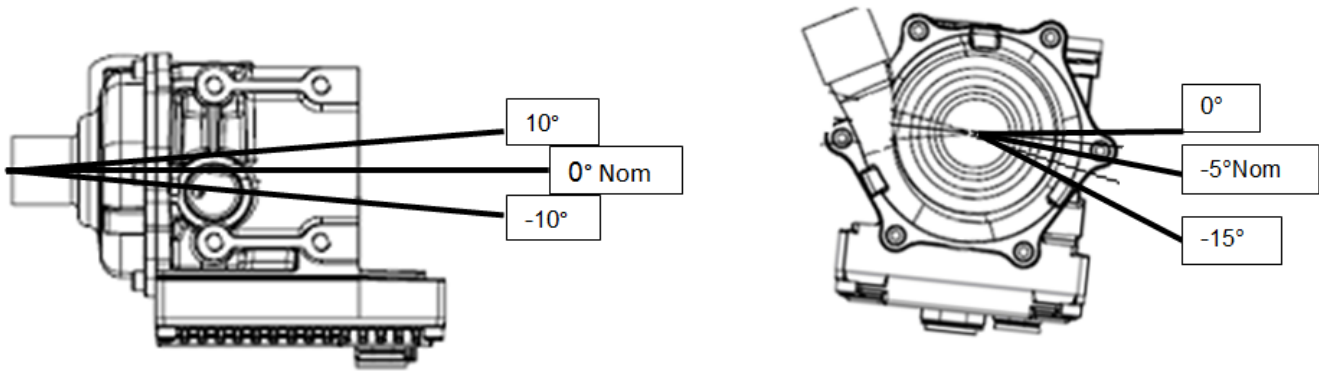


(15) - What will the orientation of the pump be from the two illustrations shown below (Vertical or Horizontal)?

**Vertical Pump Orientation**



**Horizontal Pump Orientation**



***On/Off Operation***

EMP Water Pumps that are used for on/off pump operation start immediately at the pre-programmed default speed when power is applied to the ignition wire. The cooling system must be filled before applying power to the pump ignition to prevent seal damage due to dry run condition.

**IF YOU WILL NOT BE USING CAN TO COMMUNICATE, YOU DO NOT HAVE TO READ ANY FURTHER.**

## **Important information about CAN Operation**

EMP Water Pumps are ISO 11898 compliant and utilize SAE J1939 Protocol for CAN communication. This protocol uses full 29-bit identifiers. Using the J1939 Protocol, EMP has implemented proprietary messages as well as J1939-defined messages. Water Pumps can be configured to use proprietary, J1939-defined, or a combination of both. The J1939-defined messages qualify as OBD-II compliant and are recommended for new development. Proprietary messages are recommended for legacy programs and for those who do not have access to the SAE J1939 Digital Annex (contains all defined messages). All pumps will ship with Auto-baud rate detection enabled by default.

## **CAN Operation Only: Select Options**

- Reference EMP document [9980001068](#).
- Reference J1939 Digital Annex Required ([http://standards.sae.org/j1939da\\_201707/](http://standards.sae.org/j1939da_201707/)).

<b>Address (must select only 1)</b>			
	_____	0x8A (138)	Recommended for new applications (EMP Legacy Proprietary and SAE J1939)
	_____	Other (Please specify in Hex)	Custom Request (Please specify address)
	_____	0x20 (32)	Used in EMP Legacy Proprietary Messages (Existing Applications)

<b>Message Format (must select only 1)</b>			
	_____	EMP Legacy Proprietary Messages	See EMP doc 9980001068, section 2 for more information.
	_____	SAE J1939 Standard Messages	Access to J1939 Digital Annex Required <a href="http://standards.sae.org/j1939da_201707/">http://standards.sae.org/j1939da_201707/</a>
	_____	Both	Transition from EMP Legacy Proprietary Messages to SAE J1939 Standard Messages
<b><i>If SAE J1939 or Both is selected, please specify which J1939 Command/Status PGN pair to use.</i></b>			
	_____		Electrified Accessory Propulsion Motor Coolant Pump Command/Status (31232/64510)
	_____		Electrified Accessory Power Electronics Coolant Pump Command/Status (31488/64511)
	_____		Electrified Accessory Motor Command/Status (32000/64513)

<b>External Resistor Address Enable</b>		
	_____	Are you using more than 1 pump with the same part number on same CAN Bus? (See EMP doc 9980001068, section 3.1 for more information).