

Please complete as many fields as possible to the best of your knowledge and return to [AdvRequirementForms@emp-corp.com](mailto:AdvRequirementForms@emp-corp.com).

See the attached README.pdf for explanation of component control options.

Information Completed By  
 Primary EMP or Distributor Contact  
 Property, Company, or Fleet name  
 Location (City, Province/State and Country)

Today's Date

Technical Contact

Administrative Contact

Phone  
 E-mail

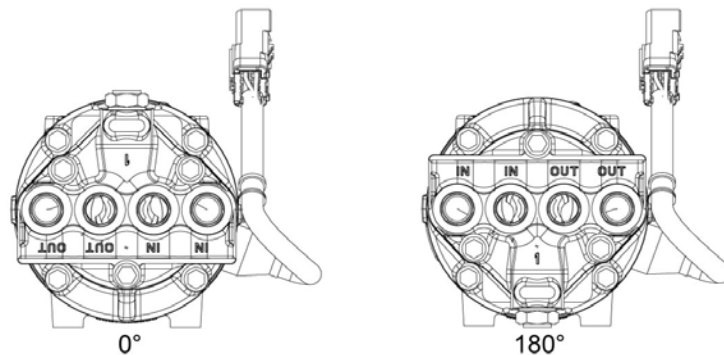
Phone  
 E-mail

1. What is the intended application? Please describe in detail.  
 Please include project name to be used as a reference for communication with EMP.
2. What is the system operating voltage range?
3. Single Stage or Dual Stage?
4. What is the required flow rate? (For dual stage pumps enter the feeder or pressure stage flow requirements).
5. For dual stage pumps enter the scavenge stage flow requirements.
6. What is the pressure drop the pump must overcome @ required flow rate? (For dual stage pumps enter the feeder or pressure stage requirements).
7. For dual stage pumps enter the scavenge stage pressure requirements.
8. What is the maximum current (amps) that will be available to the pump?
9. What fluid is being pumped?
10. What will be the operating conditions/ambient air temperatures?

1. What is the intended application? Please describe in detail. Please include project name to be used as a reference for communication with EMP.				
2. What is the system operating voltage range?	14V nominal (12V DC system) 28V nominal (24V DC system) Other (specify): _____			
3. Single Stage or Dual Stage?	Single Stage                      Dual Stage			
4. What is the required flow rate? (For dual stage pumps enter the feeder or pressure stage flow requirements).	Specify Value: <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 33%;">US GPM (Gallons per Minute)</td> <td style="text-align: center; width: 33%;">LPM (Liters per Minute)</td> <td style="text-align: center; width: 33%;">Other (specify above)</td> </tr> </table>	US GPM (Gallons per Minute)	LPM (Liters per Minute)	Other (specify above)
US GPM (Gallons per Minute)	LPM (Liters per Minute)	Other (specify above)		
5. For dual stage pumps enter the scavenge stage flow requirements.	Specify Value: <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 33%;">US GPM (Gallons per Minute)</td> <td style="text-align: center; width: 33%;">LPM (Liters per Minute)</td> <td style="text-align: center; width: 33%;">Other (specify above)</td> </tr> </table>	US GPM (Gallons per Minute)	LPM (Liters per Minute)	Other (specify above)
US GPM (Gallons per Minute)	LPM (Liters per Minute)	Other (specify above)		
6. What is the pressure drop the pump must overcome @ required flow rate? (For dual stage pumps enter the feeder or pressure stage requirements).	Minimum:	PSI kPa Bar Other (specify) _____		
	Maximum:			
	Nominal:			
7. For dual stage pumps enter the scavenge stage pressure requirements.	Minimum:	PSI kPa Bar Other (specify) _____		
	Maximum:			
	Nominal:			
8. What is the maximum current (amps) that will be available to the pump?				
9. What fluid is being pumped?				
10. What will be the operating conditions/ambient air temperatures?	Minimum:	°C °F		
	Maximum:			

11. If the pump needs to operate below zero degrees C temperatures, please list minimum temperatures, minimum flow, and resulting pressure:
12. What is the fluid inlet temperature range?
13. Select component control configuration.  
For CAN communication, also select a control option and whether to configure the component to read an external temperature sensor. Refer to README.pdf when completing the CAN Operation section.
14. Are there any certification requirements?  
E-Mark, CSA, UL; additional costs may apply for specific certifications.
15. What is the expected annual purchase volume for this product?
16. Please list all important project milestone dates, including date sample pumps are required.
17. Where will the pump be mounted? Rooftop, engine compartment, etc? Please give details.
18. What environment will the pump be exposed to? Will it be open to dirt, dust, water, road debris, etc.? Please give details.
19. Any additional application information would also be helpful.
20. What is your preferred pump head orientation for Dual Stage Pumps (See figure below for reference)?

	Minimum Temperature:	°C	°F
	Minimum Flow:		
	Resulting Pressure:		
	Minimum:	°C	
	Maximum:	°F	
	On/off control		
	Control to PWM input		
	CAN communication <i>complete CAN Operation section</i> On/off control with CAN status Control to CAN command messages Control to temperature sensor input <hr/> Configure pump to read external temperature sensor <i>Cannot be combined with external addressing</i>		
	1 <sup>st</sup> Sample:		
	PPAP:		
	SOP:		
	Other:		
	0°	180°	N/A



**Pump Head Orientation**

**CAN Operation Questions Apply to CAN Components Only**

The responses to the questions on this page are required to establish the correct software and system part number if you want to use CAN control. If you are early in the development process and not sure of the final setting requirements, please indicate that your answers are tentative or preliminary, but do not leave them blank.

**Message Format Options:** components may use EMP Defined Messages, SAE J1939 Standard Messages, or both together. Enabling both formats increases CAN traffic.

**Enable EMP Messages** Uses Motor Status Message 2 unless Motor Status Message 1 is selected below.  
Use Motor Status Message 1 For existing applications that require Motor Status Message 1.

**Enable SAE J1939 Standard Messages** requires access to [SAE J1939 Digital Annex](#).  
Must select a command/status PGN pair.

- Electrified Accessory Propulsion Motor Oil Pump Command/Status (30976/64509)
- 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)

**Addressing:**

**Source address** (factory configured/open resistance address – hexadecimal): **0x**\_\_\_\_\_

**Enable external addressing** cannot be combined with temperature input:

Short resistance address (hexadecimal): **0x**\_\_\_\_\_

Number of components using this calibration expected to share a CAN network? \_\_\_\_\_

Please provide as much information as possible about other EMP controllers that will be operating on shared CAN network (source address, function, etc.):

**Additional Comments:**

Please return this completed form to [AdvRequirementForms@emp-corp.com](mailto:AdvRequirementForms@emp-corp.com).

**EMP Office Use Only**

Resistance	CAN Address	Resistance	CAN Address	Resistance	CAN Address
Open		4.32K ohms		23.2K ohms	
Short		6.65K ohms		40.2K ohms	
1.1K ohms		10.0K ohms			
2.49K ohms		15.0K ohms			

CAN Delay: \_\_\_\_\_ CAN PGN: \_\_\_\_\_ CAN TX PGN: \_\_\_\_\_ Default Speed: \_\_\_\_\_

Power Shutdown Time: \_\_\_\_\_ Baud Rate: 250 500 1000 ABR

Hardware: \_\_\_\_\_ Software: \_\_\_\_\_

Programmed Assembly Part Number: \_\_\_\_\_