

# Safety Power's Urea Transfer System for Marine Applications (UP202M)

## Description

SCR systems work by injecting urea over a catalyst bed to convert NOx into harmless nitrogen gas and water vapor. The Urea Transfer System described below is suitable for marine SCR applications. The system is built for ABS certified vessels and is equipped with 2 pumps for full redundancy. A local alarm for power and pump failure is included to indicate if one of the redundant functions needs maintenance. The duty cycle of the pumps is also alternated to deliver maximum performance and longevity.

## Operation

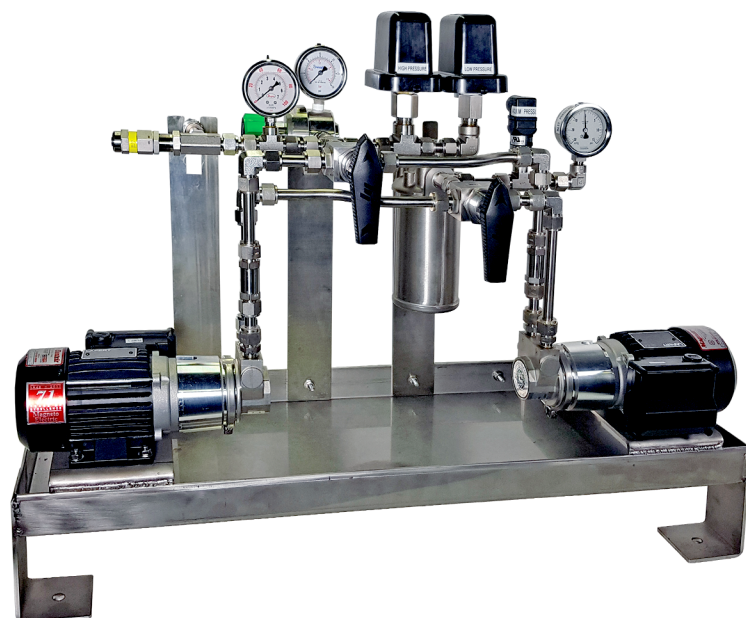
The system consists of a primary pump and an identical secondary pump to serve as a backup in the event of pump failure. Under normal operation, the system operates under "auto" mode. In the event where one pump is being repaired, the user can "manually" select either "pump 1" or "pump 2" to be used as the operating pump. At the inlet to the pump skid shown in the Block Diagram (backside) is an isolation valve which has 3 states. In normal mode it is open to the suction side of both pumps. For maintenance this valve can be manually moved to isolate either pump 1 or pump 2.

Pressure gauges on the pump skid show the pump output pressure. Pressure switches on the outlet are monitored by the controller and used to determine when a pump failover is required. Check valves with a project specified cracking pressure are used to ensure that there is no backflow through a non-operational pump. The system will also provide an associated alarm if a high or low pressure event is registered.



## Features

- Reliable duplex pump configuration
- Stainless Steel 304 construction
- PLC based controls with I/O
- Tank high/low level alarm display
- Pressure high/low alarm display
- Lockable panel
- Redundant pumps for easy repair
- Check valves
- Built in filter
- Built for ABS certified vessels

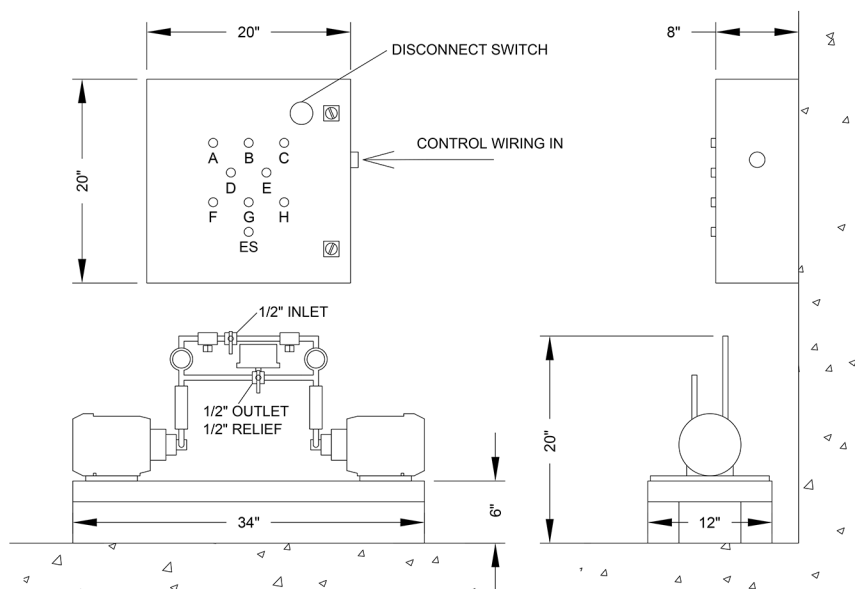


**COMPATIBLE WITH CAT, CUMMINS, MTU, AND OTHER TIER 4F CERTIFIED ENGINES**

ISO 9001 REGISTERED

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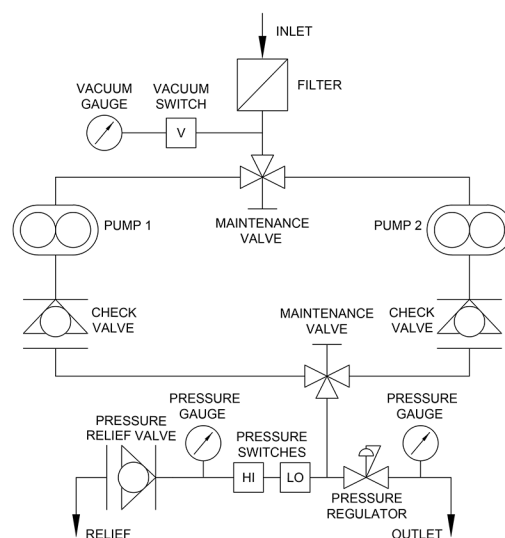
## DIMENSIONAL DRAWING



A - Panel Power ON Indicator • B - Pump1 Running Indicator • C - Pump2 Running Indicator • D - Low Pressure Indicator • E - High Pressure Indicator  
F - Off / Auto / Manual Switch • G - Pump1 / Auto / Pump2 Switch • H - Fault Reset Push Button • ES - Emergency Stop • LD - Tank Level Display\*

\* Systems without a Tank Level Display do not have a display "LD"

## BLOCK DIAGRAM



## INSTALLATION REQUIREMENTS

- Panel to be installed indoors
- Minimum ambient room temperature is 0°C (32°F)
- Maximum ambient room temperature is 50°C (122°F)
- If installed in same room as SCR or generators, ensure that there is sufficient ventilation to keep room temperature below 50°C (122°F)
- Panel not to be mounted within 6ft of a heat source (Engine, SCR or other)
- Install isolation ball valves on urea in and urea out lines for ease of servicing

## INSTALLATION GUIDELINES

- Install pumps in close proximity to urea storage tank
- Install pumps such that urea tank provides gravity fed supply to urea inlet
- Consult with Safety Power to determine ideal installation location

### About Us

Safety Power is the global innovator in emissions control for large scale diesel and natural gas engines. The company manufactures the ecoCUBE® SCR, ecoTUBE™ SCR, FOx® and Ox™ range of product that reduce NOx, CO, VOC and PM emissions on engines from 500kW up to 20MW and beyond.

Safety Power also has extensive experience with the associated urea storage & transfer system accessories. This includes urea tanks, air compressors, urea transfer pump systems, fill stations and more.

For more information about our emissions control systems & accessories please contact [info@safetypower.ca](mailto:info@safetypower.ca)