

TS-D Series

Deaerator, Surge And/or Condensate Control Panel



Description

A TS-... Series control system manages lead/lag operation of an individual deaerator (DA), surge, condensate, or a combination DA and surge/condensate tank for up to six pumps.

Each TS-... control system includes a preprogrammed 6" or 10" touchscreen, a programmable logic controller (PLC), and digital and analog signal inputs for monitoring and control.

Flexible communication interface options to the building management system (BMS) provide streamlined data collection, monitoring, and control.

Application

TS-D... control systems are suited for deaerators, surge and/or condensate tank systems, pumps controls, and other feedwater or transfer pump systems with water level control applications.

Features

- Control an individual deaerator, a surge tank, or a combination DA-surge split tank, with the ability to manage a separate DA and a surge or condensate tank with one TS-Series control panel
- Hand-Off-Auto selection switches provide continuous operation in the events of PLC and touchscreen downtime
- Rotate feedwater and transfer pumps based on run time hours
- Graphics for individual pump status and automatically configured overview screen
- Provide deaerator/surge tank alarms and status
- Maintain feedwater and transfer pump manifold pressures
- Maintain deaerator/surge tank water levels
- Monitor high and low water level switch status
- Monitor pump status via current switches
- Monitor DA steam pressure and steam pressure control
- Control make-up water valve
- Control pumps ON/OFF via motor starters or with variable frequency drives (VFDs)
- Clear English text for alarms
- Alarms logging, history, and trending
- SCC Master Panel lead/lag system interface
- Modbus TCP/IP standard for BMS interface
- Optional BACnet, LONWorks, Johnson Controls N2, or Modbus RTU communication

Components

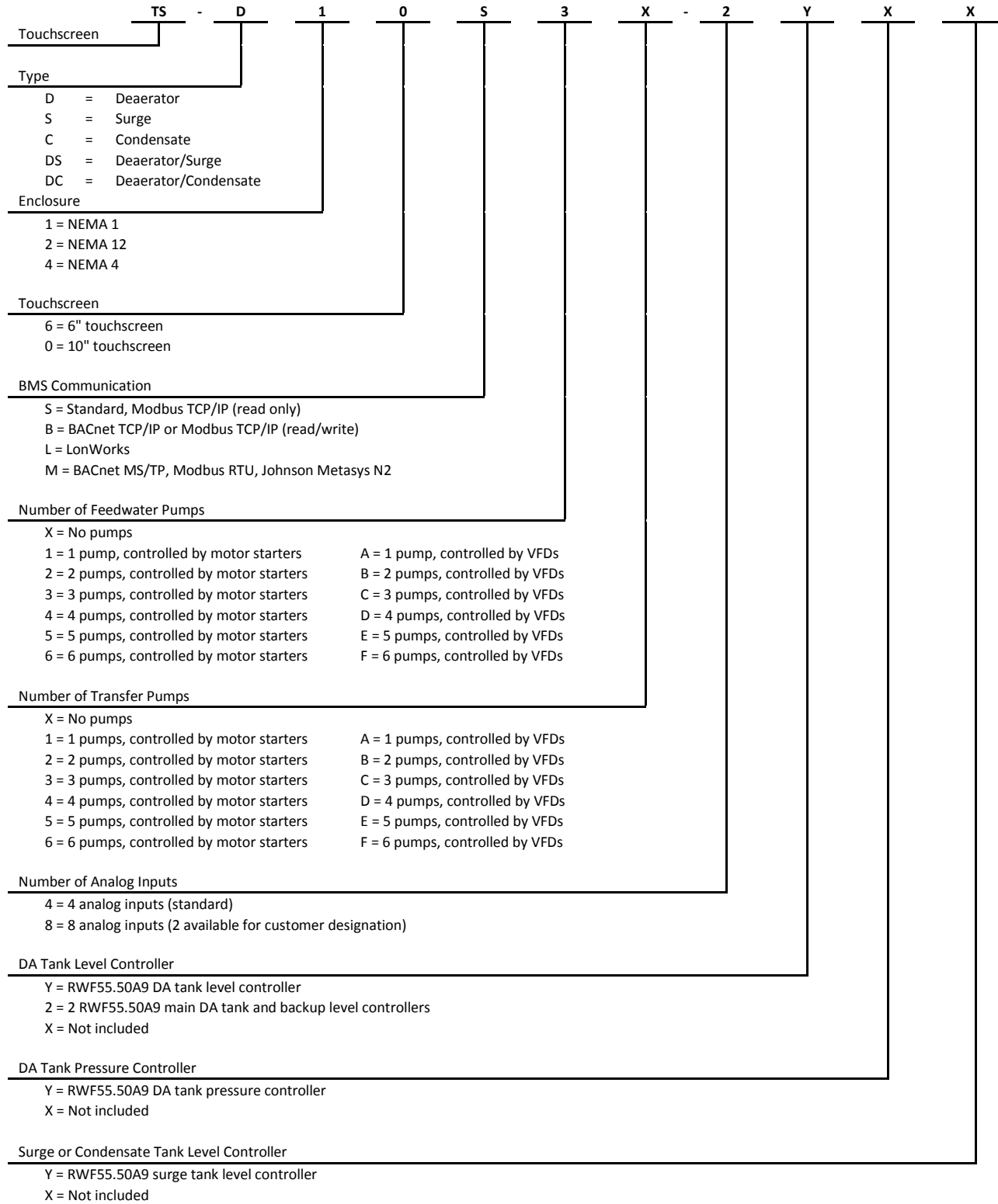
TS-D... control systems include the following components:

- Preprogrammed 6" or 10" touchscreen
- Programmable logic controller (PLC)
- Up to 4 analog inputs
- Up to 6 analog outputs
- Up to 4 RTD inputs
- Hand-Off-Auto pump control switches
- Main 120 VAC power disconnect
- Alarm horn
- 24 VDC power supply and branch circuit protection
- System ON/OFF and alarm reset switches
- Pump control relays and 40 VAC transformer for SKB/C/D water level actuator
- RWF55.50A9's for DA level control, Backup DA level control, DA pressure control, or Surge tank level control

Specifications

		6" Touchscreen	10" Touchscreen
Physical characteristics	Main power	120 VAC	120 VAC
	Touchscreen power	24 VDC	24 VDC
	Power consumption	≤ 294 W	≤ 294 W
	Dry contacts	2 Amps	2 Amps
Operating environment	Operating temperature	32 to 122 °F [0 to 50 °C]	32 to 131 °F [0 to 55 °C]
	Humidity	Max. 80% with no condensation	Max. 85% with no condensation
	NEMA rating		
	-Standard	NEMA 1	NEMA 1
-Optional	NEMA 12/NEMA 4	NEMA 12/NEMA 4	

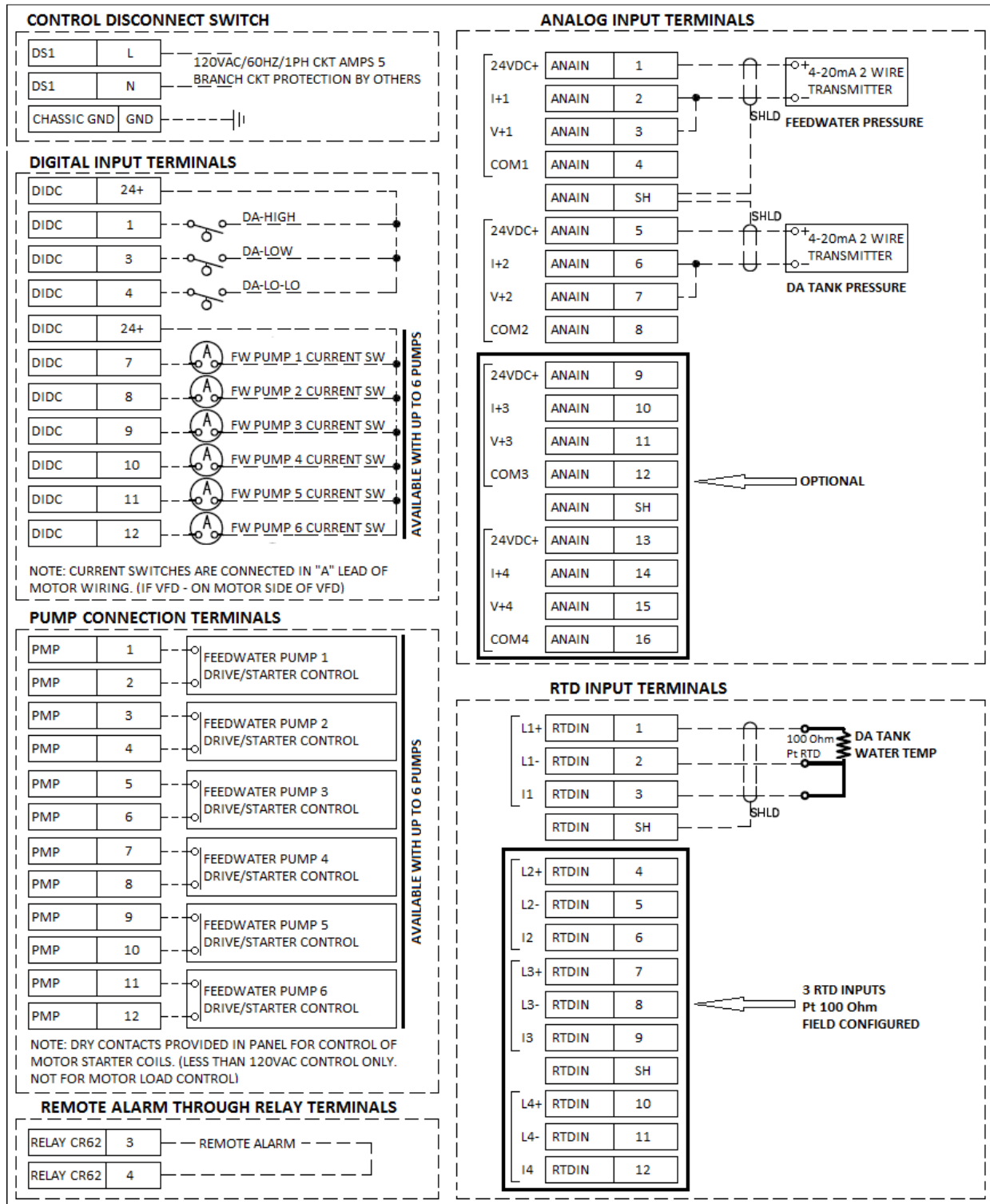
Product Part Numbers



*Note: The combined total of feedwater and transfer pumps may not exceed 6 per control system.

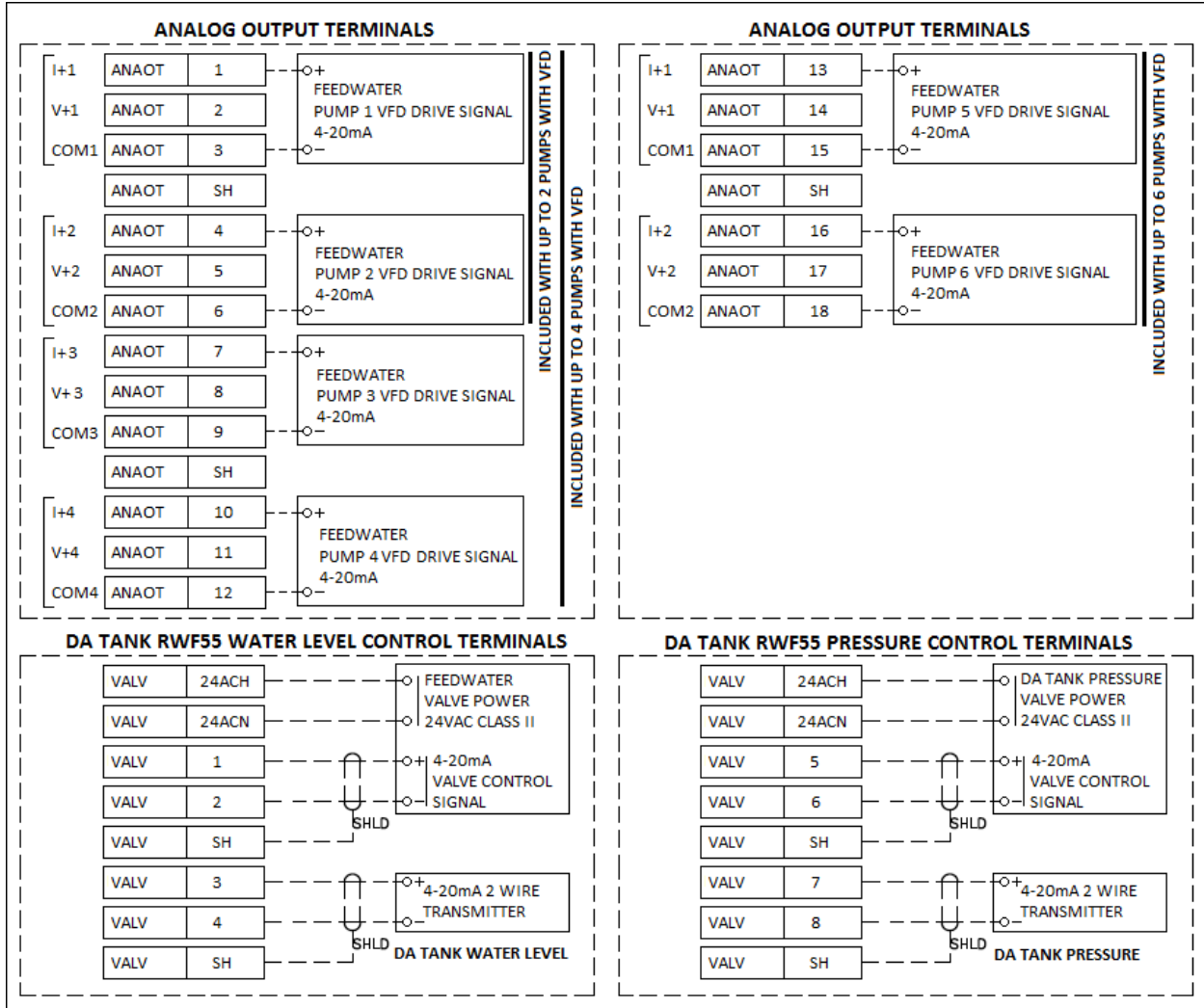
Connections (Connections are applicable based on the product part number selected)

TS-D... Series Stand-alone DA Tank with Feedwater Pumps



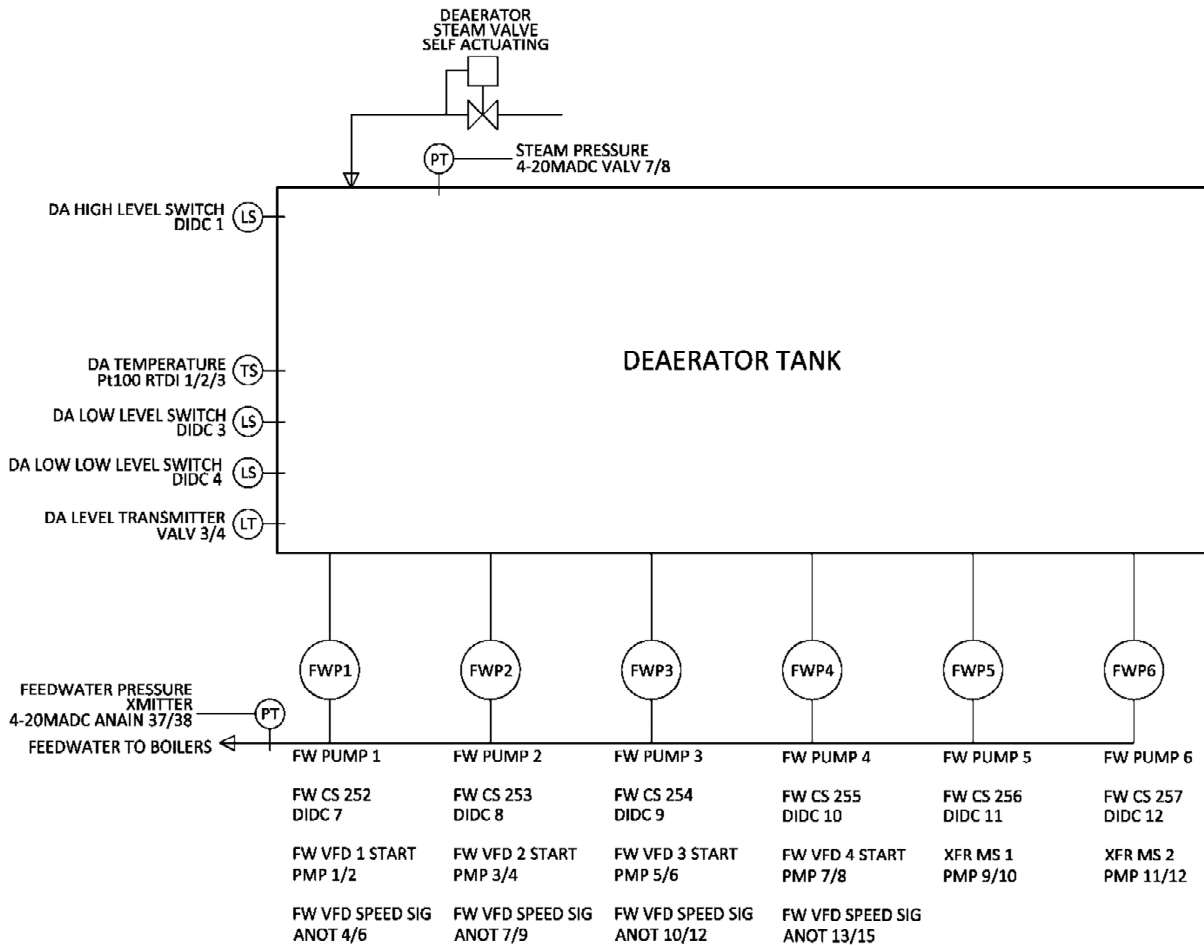
Connections (Connections are applicable based on the product part number selected)

TS-D... Series Stand-alone DA Tank with Feedwater Pumps (continued)



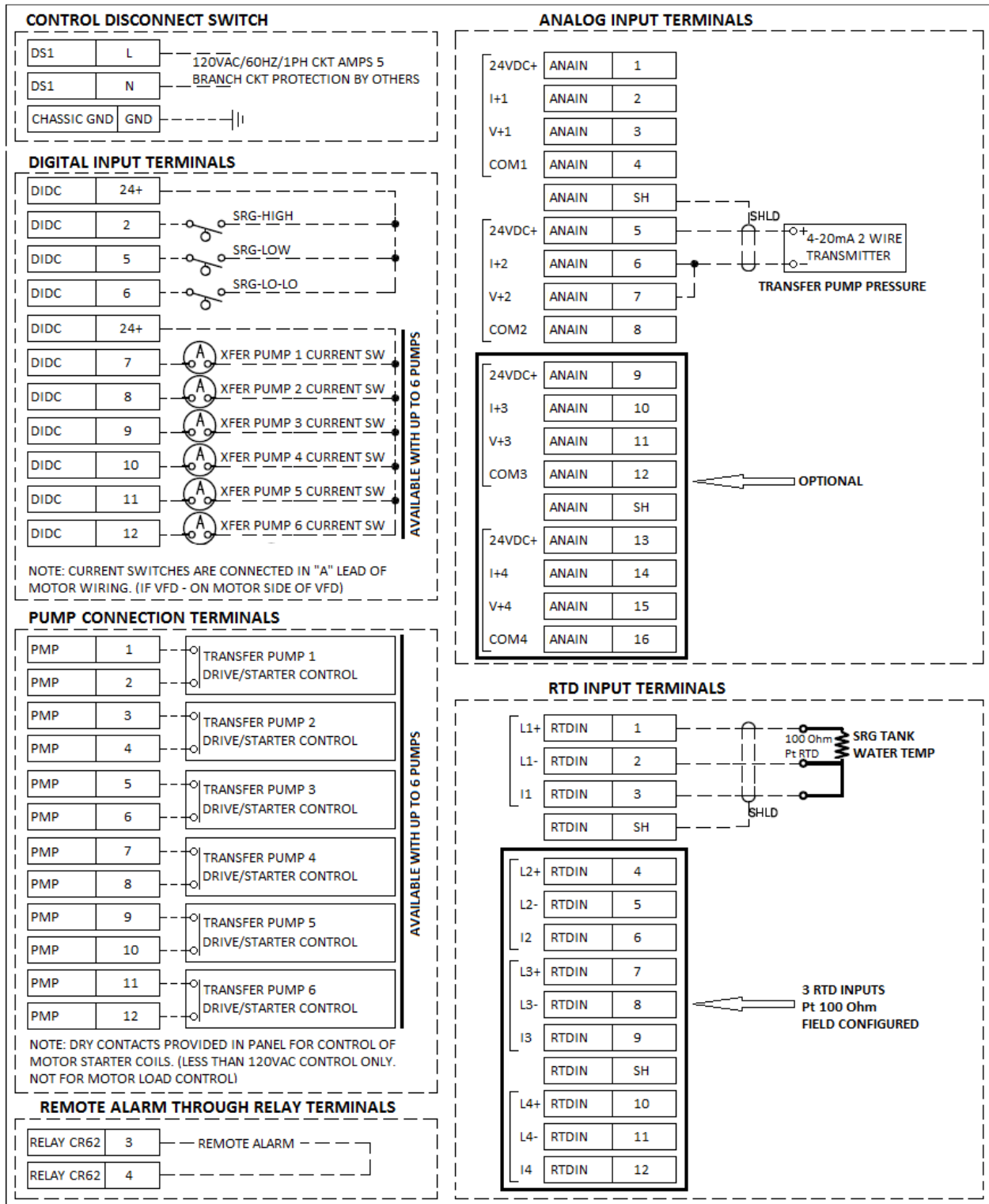
Connections (Connections are applicable based on the product part number selected)

TS-D... Series Stand-alone DA Tank Piping and Instrumentation Diagram



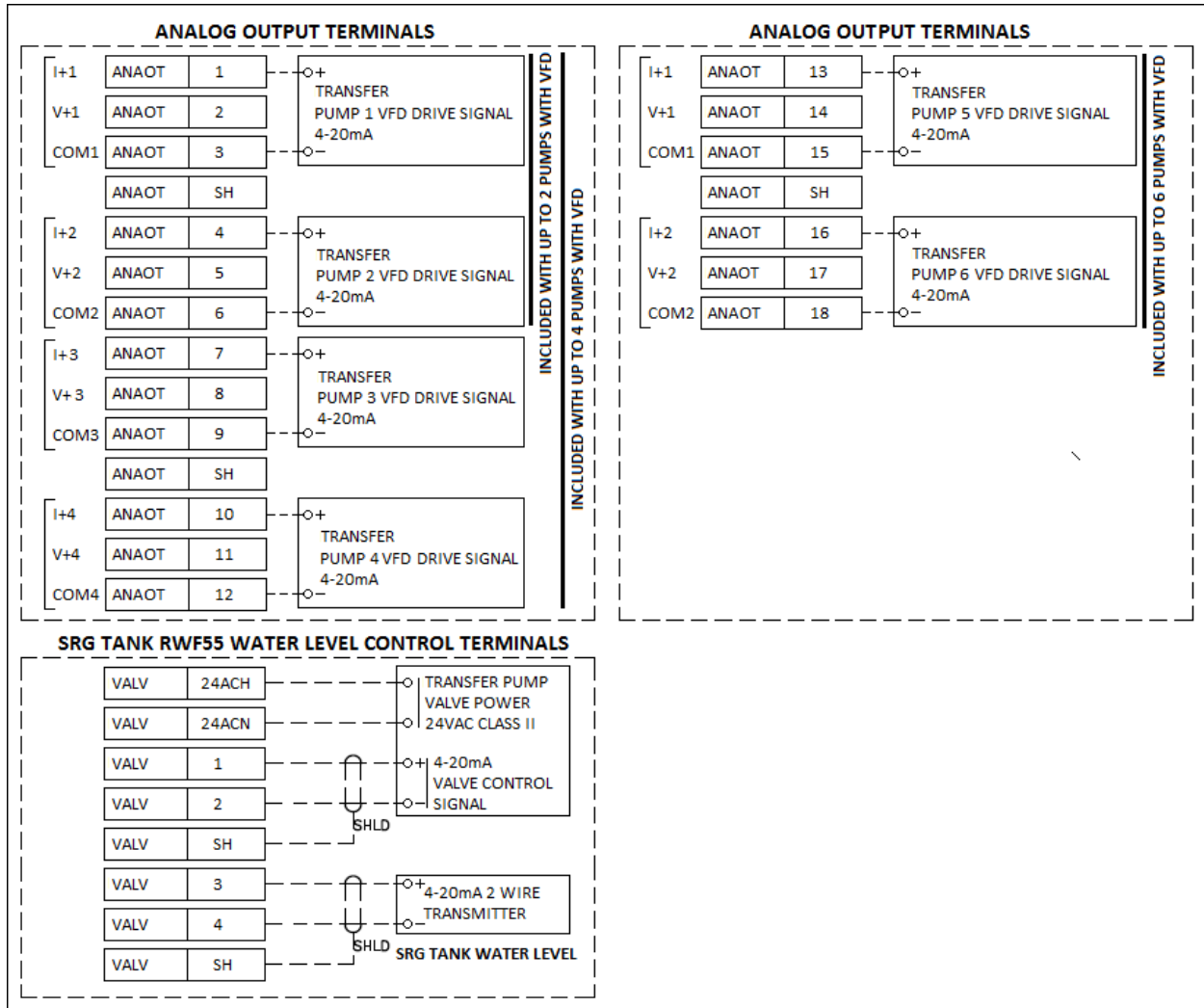
Connections (Connections are applicable based on the product part number selected)

TS-D... Series Stand-alone Surge Tank with Transfer Pumps



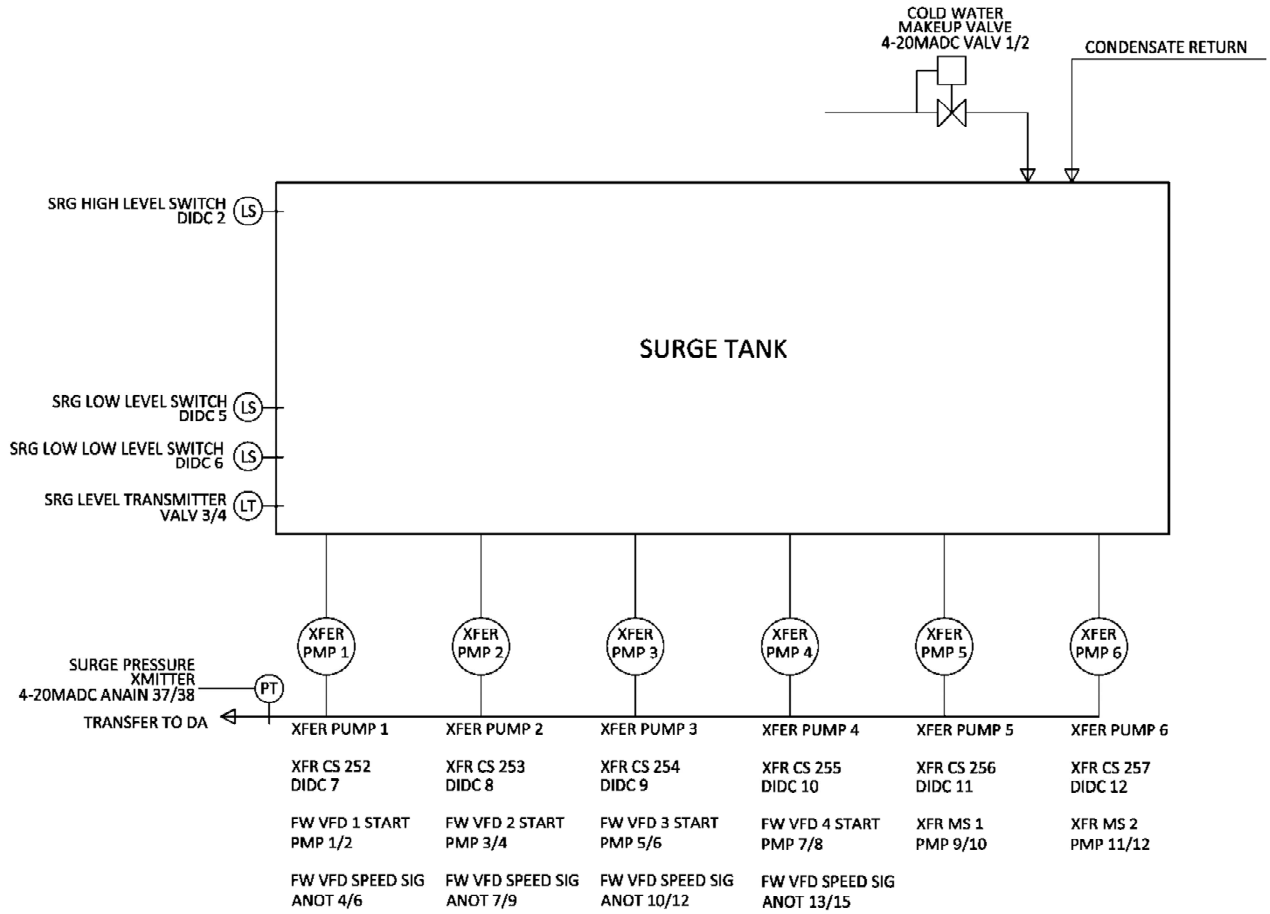
Connections (Connections are applicable based on the product part number selected)

TS-D... Series Stand-alone Surge Tank with Transfer Pumps (continued)



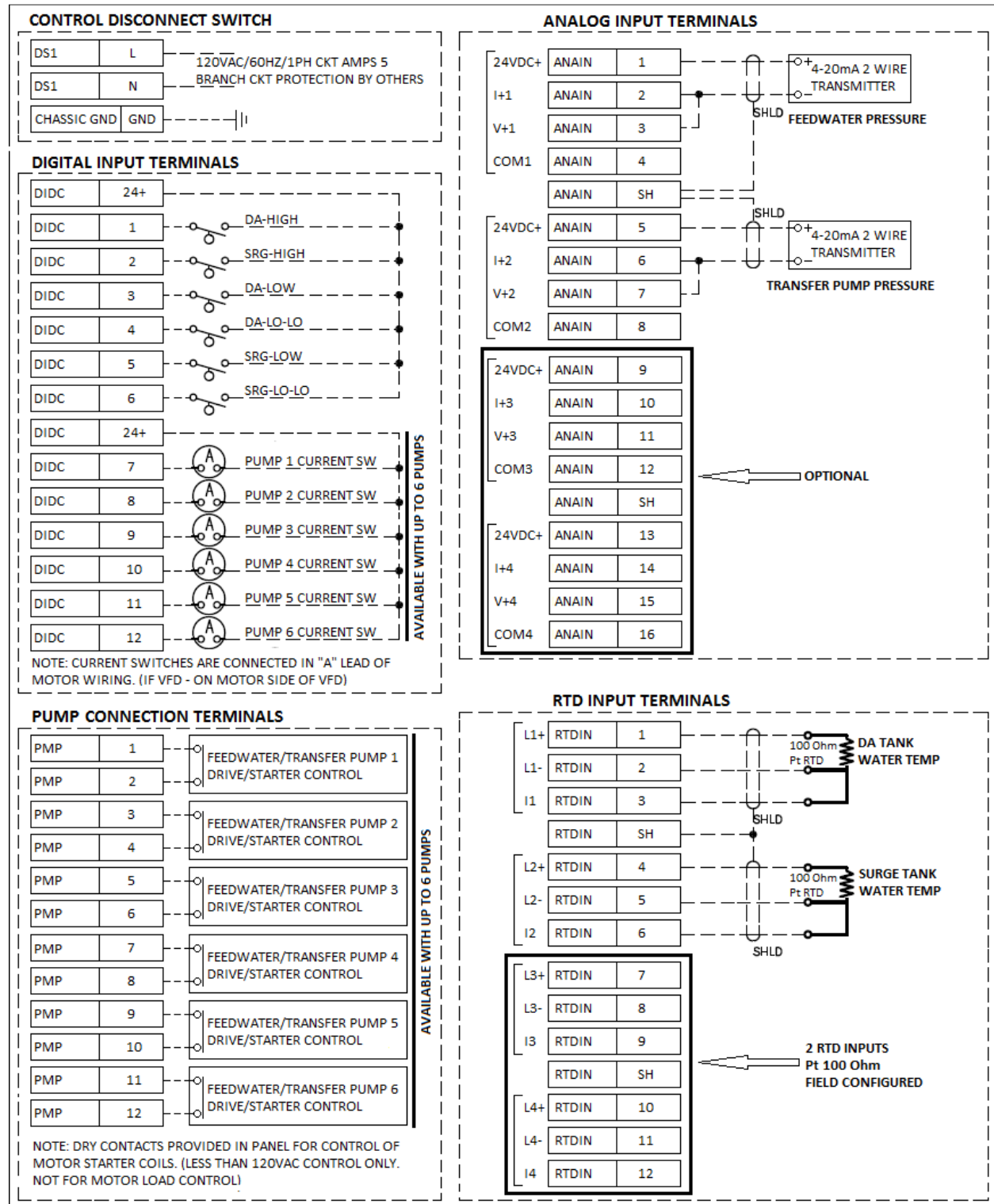
Connections (Connections are applicable based on the product part number selected)

TS-D Series Stand-alone Surge Tank Piping and Instrumentation Diagram



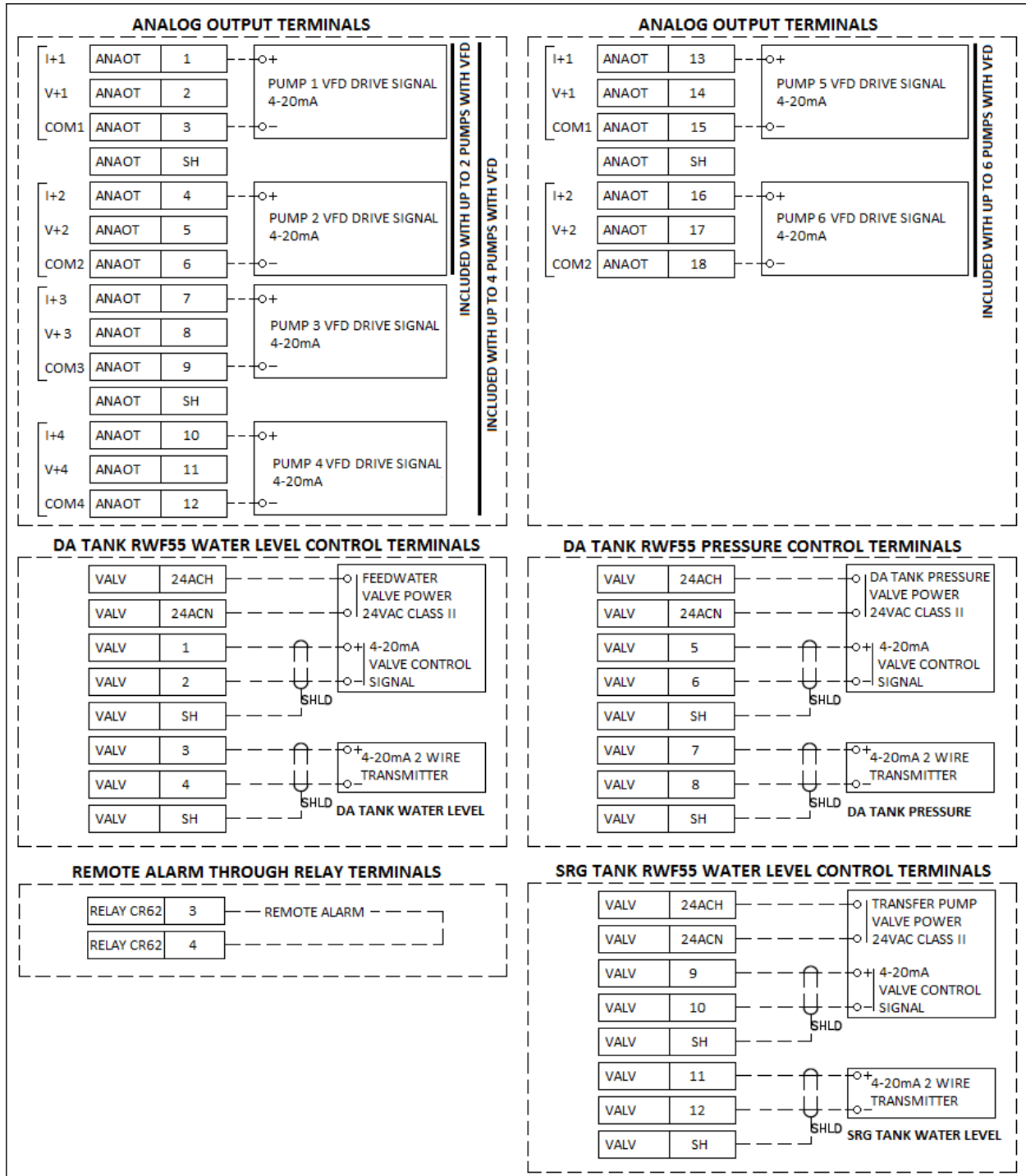
Connections (Connections are applicable based on the product part number selected)

TS-D... Series DA/Surge Split Tank with Feedwater and Transfer Pumps



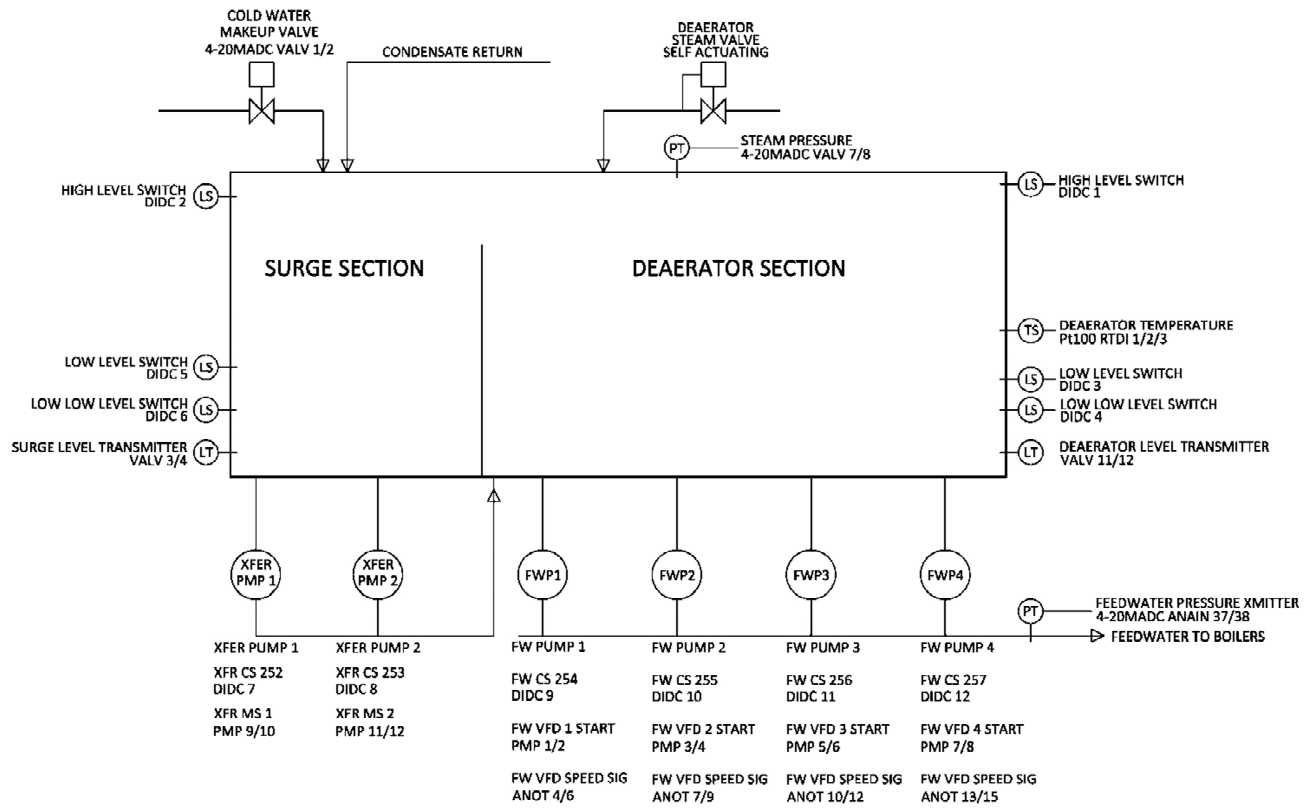
Connections (Connections are applicable based on the product part number selected)

TS-D... Series DA/Surge Split Tank with Feedwater and Transfer Pumps (continued)



Connections (Connections are applicable based on the product part number selected)

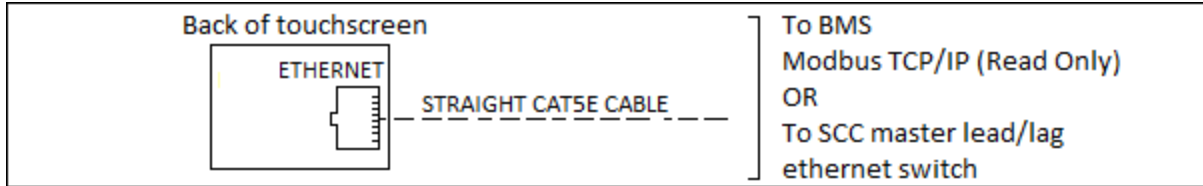
TS-D Series Split DA/Surge System Piping Instrumentation Diagram



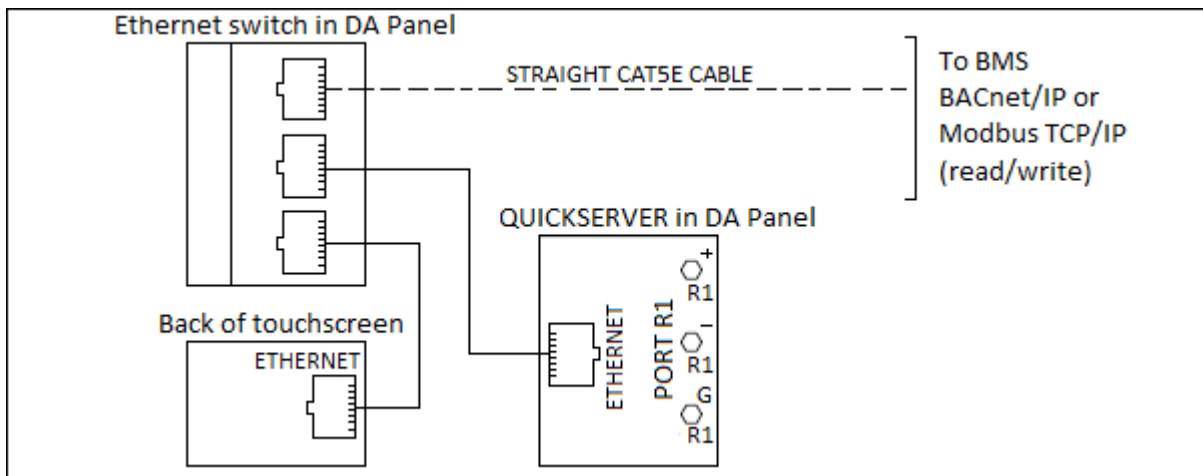
Connections (Connections are applicable based on the product part number selected)

Building Management System Communications Connections

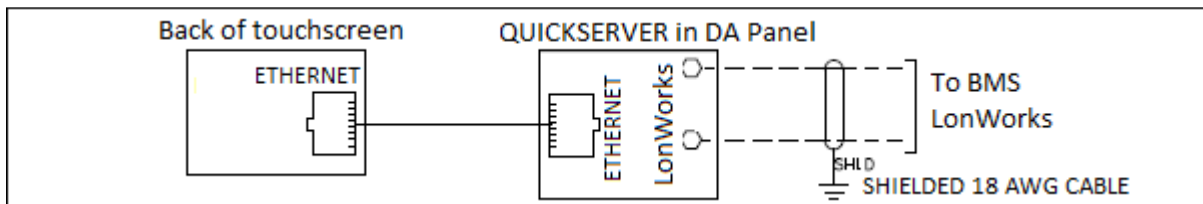
TS-DxxSxx-xxxx (Modbus TCP/IP (read only) or SCC Master Lead/Lag Panel)



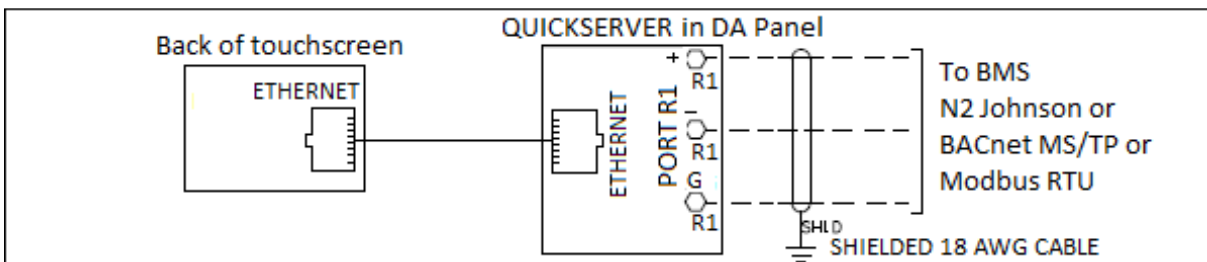
TS-DxxBxx-xxxx (BACnet IP or Modbus TCP/IP (read/write))



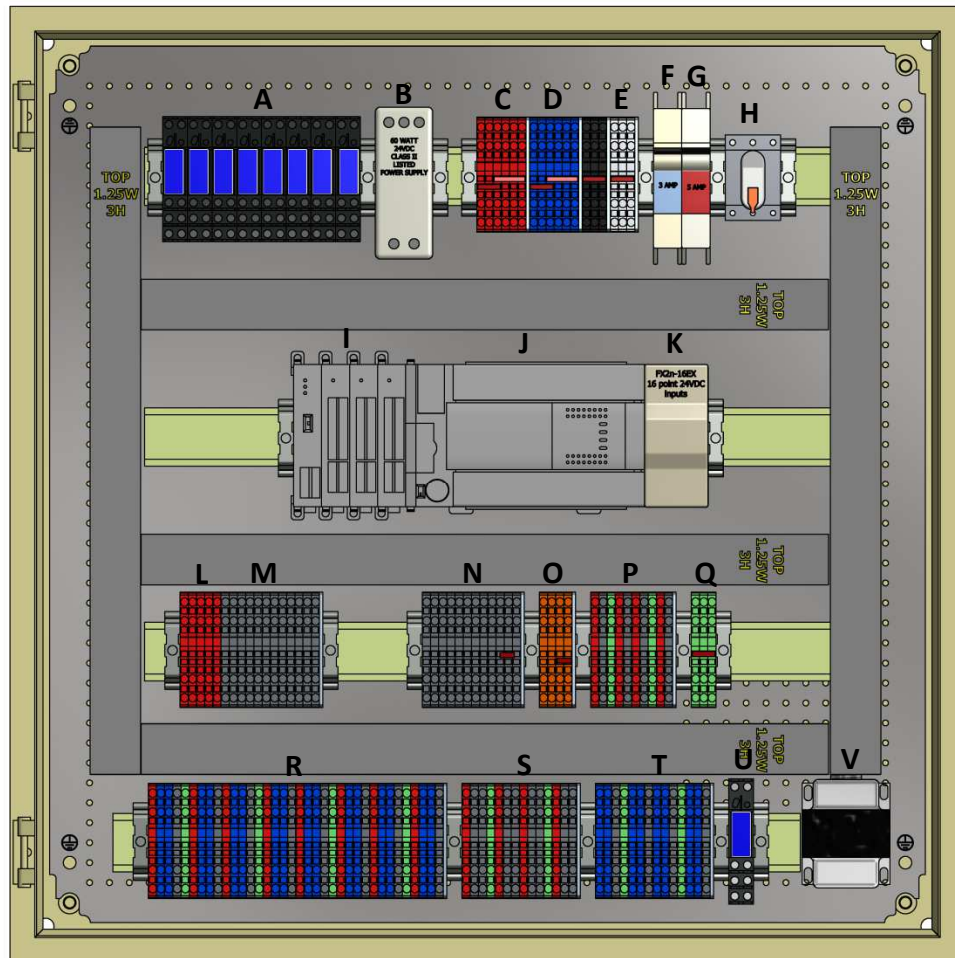
TS-DxxLxx-xxxx (LonWorks)



TS-DxxNxx-xxxx (N2 Johnson Metasys, Modbus RTU, or BACnet MS/TP)



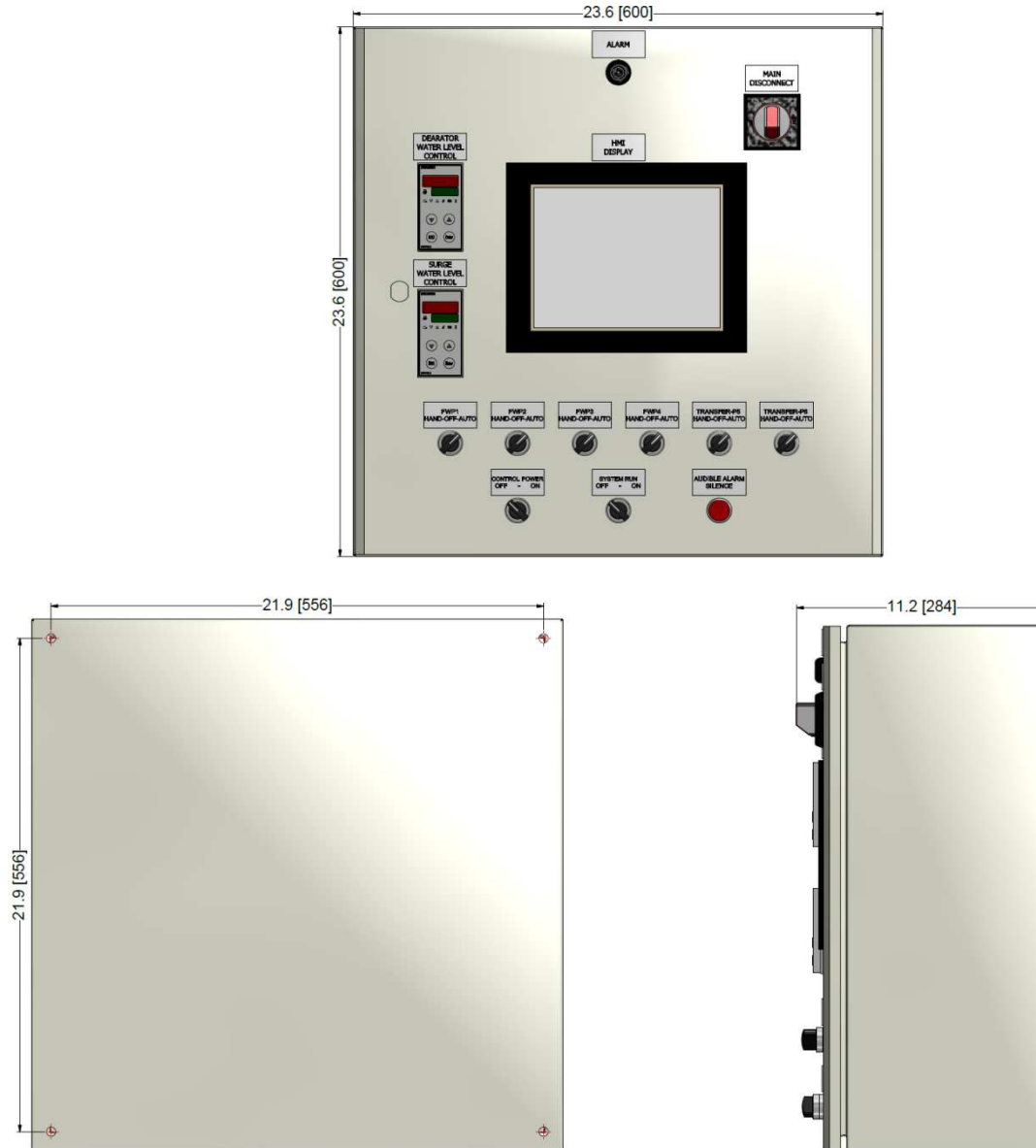
Enclosure Internal Parts Description



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| <ul style="list-style-type: none"> A. Pump and DA/surge low water relays B. 24 VDC power supply C. 24 VDC (+) terminals D. 24 VDC (-) terminals E. 120 VAC terminals F. Water level circuit breaker G. System power circuit breaker H. System 120 VAC disconnect I. Analog and RTD input modules J. Programmable logic controller (PLC) K. Digital inputs module L. 24 VDC (+) terminals | <ul style="list-style-type: none"> M. Digital input terminals N. Pump start/stop terminals O. 24 VAC feedwater actuator power terminals P. 4-20 mA feedwater modulating output terminals and 4-20 mA level DP terminals Q. Shield terminals R. Analog input terminals S. RTD input terminals T. VFD analog output terminals U. Alarm relay output terminals V. Feedwater valve 24 VAC transformer |
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Enclosure Dimensions

Dimensions in inches; millimeters in brackets



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