

Equipment Datasheet

Document Approval

Completion of the following signature blocks signifies the approver has reviewed this data and confirms all information is correct.

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Revision History

Version	Date	Author	Change No.	Description
1	01-May-2018	Alfred Chai	NA	Initial Design

Index List

No.	Description	Total Quantity	Position on Vessel
1	Bottom Mixer	2 units	N13
2	Burst Disc	3 units (with 1 spare unit for 2 Mixing Vessel)	N7
3	Diaphragm valve (1.5 inch CIP inlet pipe, tri-clamp, normally-closed actuator)	6 units	N1a/b/c
4	Load Cells	6 units Load Cells, 2 units Precision Junction Box, 2 units Analog Scale	Vessel Leg
5	Manual Sampling Valve (with 1/2 inch NovAseptic Connector)	2 units	N16
6	Manway Proximity Sensor	2 units	N12
7	Mixing Vessel	2 complete units	N/A
8	Pressure Transmitter	2 units	N9
9	Sight Glass with Light fitting	2 units	N11
10	Spray Ball	6 units	N1a/b/c
11	Tank Outlet Valve (2 inch, butt weld, normally-closed actuator)	2 units	N4
12	Temperature Transmitter with Thermowell	2 units	N10
13	Vent Filter Housing Vent Filter Element (0.22 micron)	2 units	N6

Description	Bottom Mixer
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Quantity per Vessel	1 unit	Surface Finish Certificates	Yes
Make	Millipore	Material Certificates	Yes
Size	N/A	Material Specification	AISI
Material	Stainless Steel 316L	Surface Finish Required	Ra <= 0.5 um
Seals	EPDM	Datasheet	<Alfred to Attach>
Model	Merck Novaseptic GMP20000 Agitator set (inclusive with gearbox, motor & corresponding inverter)		

Service Requirements	Motor: 0.75 4P kW 440V 50Hz, suitable for running with inverter
Functional Requirements	N/A
Control Requirements	VFD to have profinet connectivity
Installation Requirements	Bottom Mixer, magnetic impeller type

Description	Burst Disc
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Quantity per Vessel	1 unit	Surface Finish Certificates	Yes
Make	Fike	Material Certificates	Yes
Size	1-1/2" (DN40)	Material Specification	ASME
Material	Stainless Steel 316L	Surface Finish Required	Ra <= 0.5 um
Seals	Silicone Platinum Cured	Datasheet	<Alfred to Attach>
Model	Axis SC		

Service Requirements	3 bar @ 150 deg C
Functional Requirements	Full vacuum
Control Requirements	With burst indicator
Installation Requirements	Mount Clamp, NovAseptic Connector

Description	Diaphragm valve (1.5 inch CIP inlet pipe, tri-clamp, normally-closed actuator)
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Quantity per Vessel	3 units	Surface Finish Certificates	Yes
Make	Millipore	Material Certificates	Yes
Size	1"	Material Specification	ASME
Material	Stainless Steel 316L	Surface Finish Required	Ra <= 0.5 um
Seals	EPDM	Datasheet	<Alfred to Attach>
Model	Valve: NU100/311-212 Actuator: PA25/111 Diaphragm: NA25/22 Position Indicator: PA1251/SP		

Service Requirements	Pressure 3 bar, Temperature 160 deg C
Functional Requirements	Normally Closed
Control Requirements	Manually actuated valve
Installation Requirements	Tri-clamp ferrule

Description	Load Cells
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Quantity per Vessel	3 units Load Cells, 1 unit Precision Junction Box, 1 unit Analog Scale	Surface Finish Certificates	N/A
Make	Mettler Toledo	Material Certificates	N/A
Size	N/A	Material Specification	N/A
Material	Stainless Steel 316L <Alfred???	Surface Finish Required	N/A
Seals	N/A	Datasheet	<Alfred to Attach>
Model	Load Cell: SWC415 PM SS Precision Junction Box: AJB540S Analog Scale: AC350; 30076689		

Service Requirements	Installed at the bottom of vessel
Functional Requirements	7.5 tonnes
Control Requirements	With feedback to terminal module
Installation Requirements	Vessel Bottom Leg

Description	Manual Sampling Valve (with 1/2 inch NovAseptic Connector)		
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Quantity per Vessel	1 unit	Surface Finish Certificates	<Alfred>
Make	Millipore	Material Certificates	<Alfred>
Size	<Alfred>	Material Specification	<Alfred>
Material	<Alfred>	Surface Finish Required	<Alfred>
Seals	<Alfred>	Datasheet	<Alfred to Attach>
Model	<Alfred>		

Service Requirements	<Alfred>
Functional Requirements	<Alfred>
Control Requirements	<Alfred>
Installation Requirements	<Alfred>

Description	Manway Proximity Sensor
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Quantity per Vessel	1 unit	Surface Finish Certificates	No
Make	ifm electronic gmbh	Material Certificates	No
Size	<Alfred??>	Material Specification	<Alfred??>
Material	<Alfred??>	Surface Finish Required	N/A
Seals	N/A	Datasheet	<Alfred to Attach>
Model	IGT200		

Service Requirements	10 - 36 vDC
Functional Requirements	Normally Open
Control Requirements	3 Wire DC PNP
Installation Requirements	IP68; IP 69K; M18 connector <Alfred?? M12??>

Description	Mixing Vessel
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Quantity per Vessel	1 complete unit	Surface Finish Certificates	Yes
Make	Pharmafood Engineering	Material Certificates	Yes
Size	ID 2500 x SL 2440	Material Specification	ASME SEC. VIII. DIV.1 <Alfred??>
Material	Stainless Steel 316L	Surface Finish Required	Ra <= 0.5 um
Seals	Diaphragm EPDM	Datasheet	<Alfred to Attach>
Model	SS316L 15,000 L half-pipe jacketed Mixing Vessel		

Service Requirements	4 barg @ 150 deg C - 1 barg Vacuum
Functional Requirements	With bottom mixer and jacketed
Control Requirements	Pneumatically actuated tank bottom outlet valve
Installation Requirements	3 bottom leg support

Description	Pressure Transmitter
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Quantity per Vessel	1 unit	Surface Finish Certificates	No
Make	Endress+Hauser	Material Certificates	Yes
Size	1-1/2"	Material Specification	AISI
Material	N/A	Surface Finish Required	Ra <= 0.5 um
Seals	Diaphragm Seal	Datasheet	<Alfred to Attach>
Model	PMP55-4JXF0/0		

Service Requirements	10 bar - 40 bar <Alfred???
Functional Requirements	With local display
Control Requirements	4 - 20 mA output Supply voltage 11.5 - 45 vDC
Installation Requirements	Mount Clamp, NovAseptic Connector

Description	Sight Glass with Light fitting
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Quantity per Vessel	1 unit	Surface Finish Certificates	No
Make	Max Muller AG	Material Certificates	No
Size	<Alfred>	Material Specification	AISI
Material	Stainless Steel 316L / GLASS	Surface Finish Required	Ra <= 0.5 um
Seals	N/A	Datasheet	<Alfred to Attach>
Model	BKVLR 100HD		

Service Requirements	24 VDC/VAC 100 Watt
Functional Requirements	N/A
Control Requirements	N/A
Installation Requirements	IP65

Description	Spray Ball
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Quantity per Vessel	3 units	Surface Finish Certificates	Yes
Make	Aerre Inox	Material Certificates	Yes
Size	3/4"	Material Specification	AISI
Material	Stainless Steel 316L	Surface Finish Required	Ra <= 0.5 um
Seals	N/A	Datasheet	<Alfred to Attach>
Model	TR-C-weld end		

Service Requirements	4,100 - 6,300 liter per hour at 1 - 3 bar
Functional Requirements	360 degree spray pattern
Control Requirements	N/A
Installation Requirements	Tri-clamp to Vessel Top

Description	Tank Outlet Valve (2 inch, buttweld, normally-closed actuator)
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Quantity per Vessel	1 unit	Surface Finish Certificates	Yes
Make	Millipore	Material Certificates	Yes
Size	2"	Material Specification	ASME
Material	Stainless Steel 316L	Surface Finish Required	Ra <= 0.5 um
Seals	EPDM	Datasheet	<Alfred to Attach>
Model	Valve: NU200/442-312 Actuator: PA51/111 Diaphragm: NA51/22 Position Indicator: PA1251/SP		

Service Requirements	Pressure 3 bar, Temperature 160 deg C
Functional Requirements	Normally Closed
Control Requirements	Pneumatically actuated valve with Closed feedback
Installation Requirements	Buttweld, 2 inch ferrule end

Description	Temperature Transmitter with Thermowell
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Quantity per Vessel	1 unit	Surface Finish Certificates	Thermowell: Yes Temperature Probe: No
Make	Endress+Hauser	Material Certificates	Thermowell: Yes Temperature Probe: No
Size	NPT 1/2"	Material Specification	N/A
Material	Thermowell: Stainless Steel 316L	Surface Finish Required	Ra <= 0.5 um
Seals	N/A	Datasheet	<Alfred to Attach>
Model	Omnigrad T TR24		

Service Requirements	-200 deg C / 600 deg C
Functional Requirements	PT 100 sensing element
Control Requirements	4 - 20 mA output signal
Installation Requirements	Thermowell welded to Vessel Bottom

Description	Vent Filter Housing Vent Filter Element (0.22 micron)
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Quantity per Vessel	1 unit	Surface Finish Certificates	Housing: Yes Filter Element: No
Make	Millipore	Material Certificates	Yes
Size	Inlet/Outlet: 1" Vent: 1/2" Heater: TBA (supplier to match with selected Vent filter) <Alfred??>	Material Specification	ASME
Material	Housing: Stainless Steel 316L Filter Element: PTFE	Surface Finish Required	Housing Wetted Surface: Ra <= 0.5 um
Seals	Silicone O ring / EPDM / PTFE <Alfred??>	Datasheet	<Alfred to Attach>
Model	Housing: H1UE7T1G01PC Filter Element: CTGB71TP3		

Service Requirements	10 barg @140 deg C (Maximum)
Functional Requirements	Trace heater: 240 V (50 hz) / AB05 / AB02 code 2 cartridge
Control Requirements	N/A
Installation Requirements	Tri-clamp ferrule