

UVA QT System

Operational settings



Operator



Time 2:50:21 PM

Date 5/27/2022

QLHe100A

QLHe100B

Dewar Cooldown

Liquefy

PurifierA

Manual

PurifierB

Disabled

HR3

Off



Overall System

System Overview

System Settings

Alarms

Liquefiers

Liquefier A

Liquefier B

Liquefier C

Liquefier A Settings

Liquefier B Settings

Helium Compressors

Purifiers

Purifier Overview

Purifier Settings

Analog Scaling

Liquefier A/B

ODH

Purifier A

Overall



User	Password	Group	Logoff time
			1



Operator



Time 11:18:17 AM

QLHe100A

Dewar Cooldown

PurifierA Manual

HR3

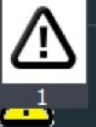
Date 5/27/2022

QLHe100B

Dewar Cooldown

PurifierB Disabled

Off



	Enabled	Remote	Status	Alarm	Reset Alarm	Heater Status	Current Temp	Manual	Manual Run	Manual Heater	Manual Pause	Total Run Hours
CP501A	<input type="checkbox"/>	<input type="checkbox"/>	●	<input type="checkbox"/>	Reset	<input type="checkbox"/>	80.61K	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.1h
CP502A	<input type="checkbox"/>	<input type="checkbox"/>	●	<input type="checkbox"/>	Reset	<input type="checkbox"/>	76.46K	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.1h
CP503A	<input type="checkbox"/>	<input type="checkbox"/>	●	<input type="checkbox"/>	Reset	<input type="checkbox"/>	80.33K	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.1h
CP504A	<input type="checkbox"/>	<input type="checkbox"/>	●	<input type="checkbox"/>	Reset	<input type="checkbox"/>	89.76K	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.1h
CP505A	<input type="checkbox"/>	<input type="checkbox"/>	●	<input type="checkbox"/>	Reset	<input type="checkbox"/>	76.70K	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.1h
CP501B	<input type="checkbox"/>	<input type="checkbox"/>	●	<input type="checkbox"/>	Reset	<input type="checkbox"/>	73.43K	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.1h
CP502B	<input type="checkbox"/>	<input type="checkbox"/>	●	<input type="checkbox"/>	Reset	<input type="checkbox"/>	76.07K	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.1h
CP503B	<input type="checkbox"/>	<input type="checkbox"/>	●	<input type="checkbox"/>	Reset	<input type="checkbox"/>	82.60K	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.1h
CP504B	<input type="checkbox"/>	<input type="checkbox"/>	●	<input type="checkbox"/>	Reset	<input type="checkbox"/>	73.26K	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.1h
CP505B	<input type="checkbox"/>	<input type="checkbox"/>	●	<input type="checkbox"/>	Reset	<input type="checkbox"/>	74.74K	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.1h





System Overview



Operator



Time 2:50:42 PM

QLHe100A

Dewar Cooldown

PurifierA

Manual

HR3

Date 5/27/2022

QLHe100B

Liquefy

PurifierB

Disabled

Off



System Enable

RUN

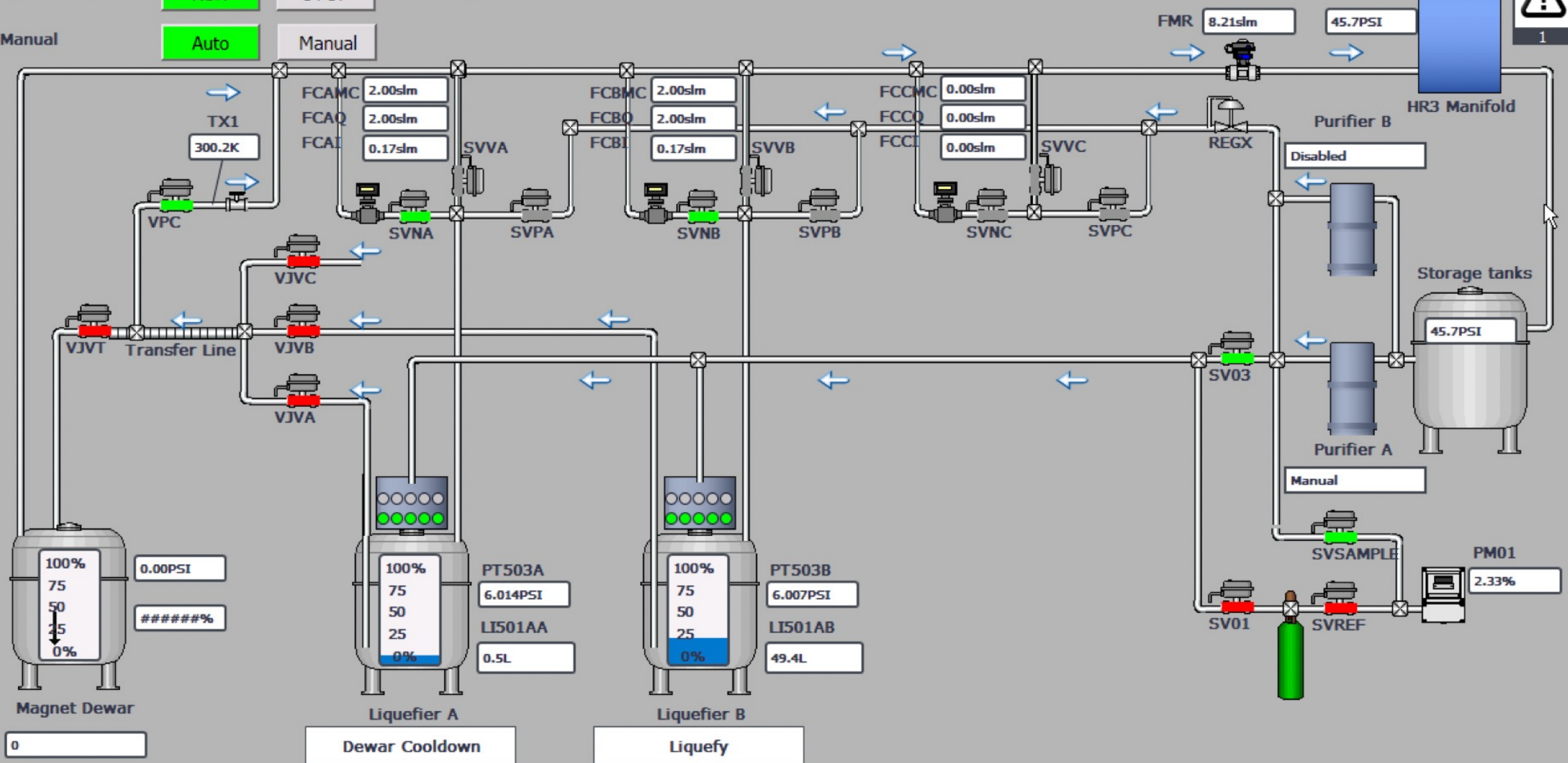
STOP

E-Stop

Manual

Auto

Manual





Operator



Time 2:51:14 PM

QLHe100A

Dewar Cooldown

PurifierA Manual

HR3

Date 5/27/2022

QLHe100B

Liquefy

PurifierB Disabled

Off



QLHe100A

Dewar Cooldown

Liquefier Enable

RUN

STOP

Manual

Auto

Manual

Settings

Liquefier Warnings

Dewar Low Pressure



Dewar Level High



Blocking



He Compressor Error



Low Supply Pressure



Liquefier Alarms

Current

History

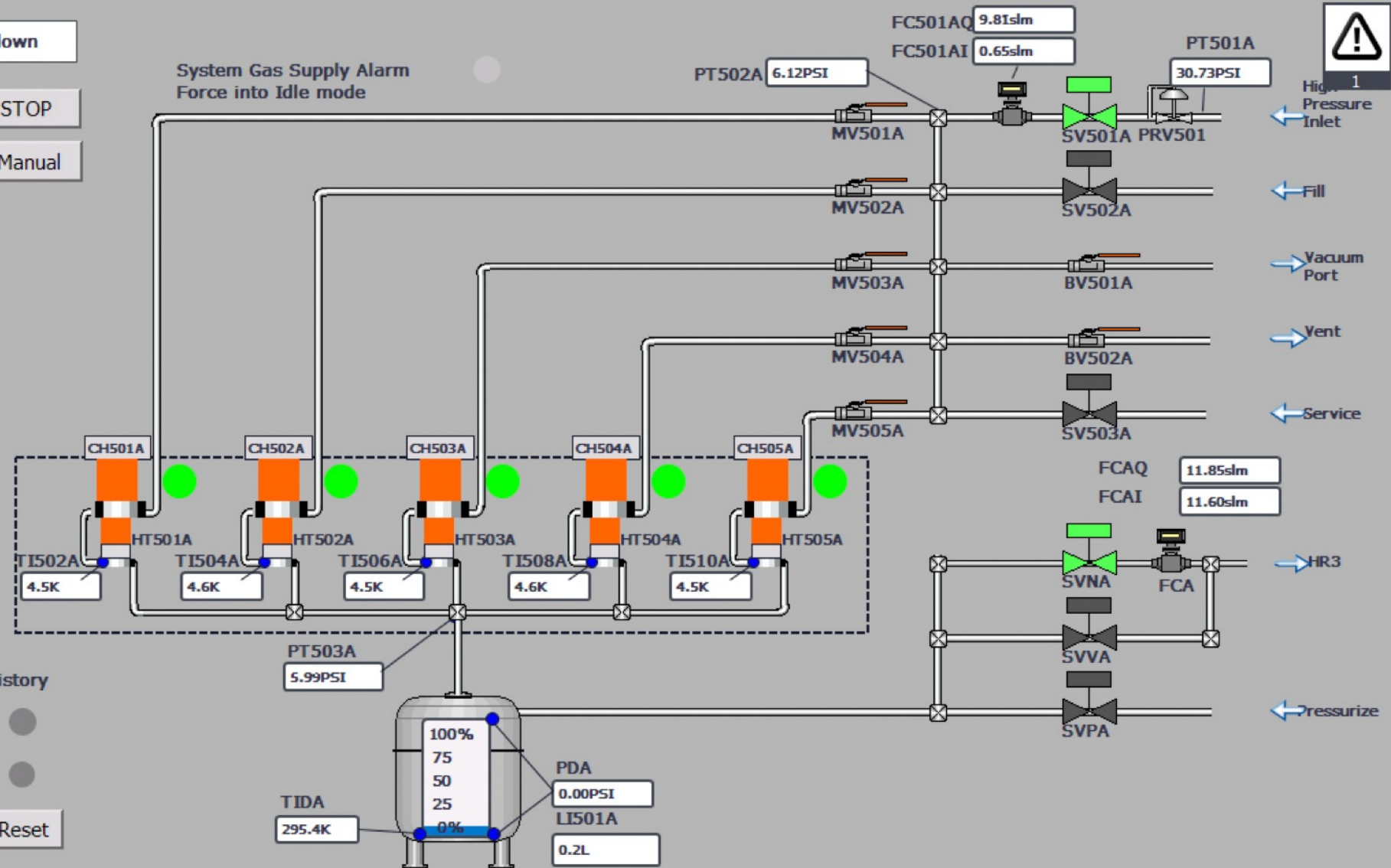
Dewar Low Pressure



No Compressor Running



Reset





Operator



Time 2:51:38 PM

QLHe100A

Dewar Cooldown

PurifierA Manual

HR3

Date 5/27/2022

QLHe100B

Liquefy

PurifierB Disabled

Off



Liquefier Pressure Settings

Dewar Pressure Setpoint 6.0 PSI

Increase Vent Flow Pressure Increase 1.0 PSI

Enable Heater Pressure Drop 0.3 PSI

Cooldown Mode Settings

Outlet Flow Setpoint @300K 12.0SLPM

Mode End: Dewar Level 5.0%

Mode End: Coldhead Temperature 6.0K

Liquefier Operational Settings

Outlet Flow Setpoint 2.0SLPM

Pre-transfer Cooldown Mode Settings

Enable SVV Quick Vent OFF

Mode End: Dewar Pressure 6.0 PSI

Mode End: Timeout 60 Min

Mode End: Timeout Vent Enable OFF

Transfer Line Cool and Transfer Settings

Recovery Inlet Target Pressure 0.3 PSI

Dewar Pressure Adjustment 0.1 PSI

Dewar Pressure Adjustment Interval 30.0s

Dewar Max Pressure 5.0 PSI

Dewar Min Pressure 2.0 PSI

Alarm Settings

Low Pressure PT503< 1.00 PSI



1

Warning Settings

Dewar Level High 90.00%

Coldhead Temperature Low 4.0K

Low Storage Supply Pressure 10.0 PSI





Operator



Time 2:51:58 PM

QLHe100A

Dewar Cooldown

PurifierA Manual

HR3

Date 5/27/2022

QLHe100B

Liquefy

PurifierB Disabled

Off



QLHe100B

Liquefy

Liquefier Enable

RUN

STOP

Manual

Auto

Manual

Settings

Liquefier Warnings

Dewar Low Pressure



Dewar Level High



Blocking



He Compressor Error



Low Supply Pressure



Liquefier Alarms

Current

History

Dewar Low Pressure

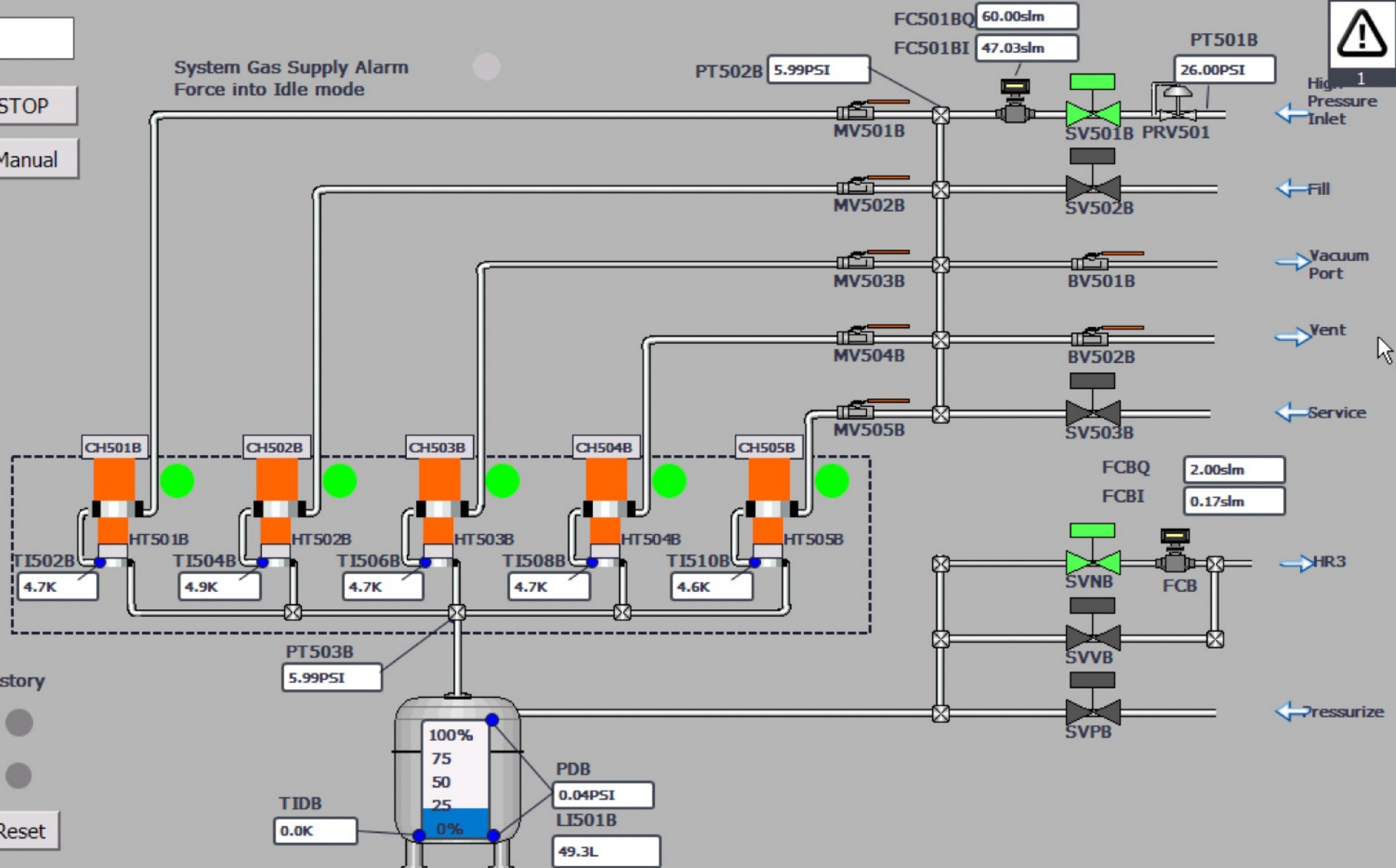


No Compressor Running



Reset

System Gas Supply Alarm
Force into Idle mode



High Pressure Inlet

Fill

Vacuum Port

Vent

Service

HR3

Resurize

PT501B

26.00PSI

PT502B

5.99PSI

FC501BQ

60.00slm

FC501BI

47.03slm

FCBQ

2.00slm

FCBI

0.17slm

PDB

0.04PSI

LI501B

49.3L

TIDB

0.0K

PT503B

5.99PSI

CH501B

HT501B

TI502B

4.7K

CH502B

HT502B

TI504B

4.9K

CH503B

HT503B

TI506B

4.7K

CH504B

HT504B

TI508B

4.7K

CH505B

HT505B

TI510B

4.6K

SV501B

PRV501

MV501B

SV502B

MV502B

SV502B

MV503B

BV501B

MV504B

BV502B

MV505B

SV503B

SVNB

FCB

SVVB

SVPB



Operator



Time 2:52:18 PM

Date 5/27/2022

QLHe100A

Dewar Cooldown

QLHe100B

Liquefy

PurifierA Manual

PurifierB Disabled

HR3

Off



Liquefier Pressure Settings

Dewar Pressure Setpoint 6.0 PSI

Increase Vent Flow Pressure Increase 1.0 PSI

Enable Heater Pressure Drop 0.3 PSI

Cooldown Mode Settings

Outlet Flow Setpoint @300K 12.0SLPM

Mode End: Dewar Level 5.0%

Mode End: Coldhead Temperature 6.0K

Liquefier Operational Settings

Outlet Flow Setpoint 2.0SLPM

Pre-transfer Cooldown Mode Settings

Enable SVV Quick Vent OFF

Mode End: Dewar Pressure 6.0 PSI

Mode End: Timeout 60 Min

Mode End: Timeout Vent Enable OFF

Transfer Line Cool and Transfer Settings

Recovery Inlet Target Pressure 0.3 PSI

Dewar Pressure Adjustment 0.1 PSI

Dewar Pressure Adjustment Interval 30.0s

Dewar Max Pressure 5.0 PSI

Dewar Min Pressure 2.0 PSI

Alarm Settings

Low Pressure PT503< 1.00 PSI



1

Warning Settings

Dewar Level High 90.00%

Coldhead Temperature Low 4.0K

Low Storage Supply Pressure 10.0 PSI





Operator



Time 2:52:35 PM

QLHe100A

Dewar Cooldown

PurifierA Manual

HR3

Date 5/27/2022

QLHe100B

Liquefy

PurifierB Disabled

Off



QuantumPure He Overview

QuantumPure LN2 Overview

QuantumPure Control

QuantumPure Settings

QuantumPure Alarms

QuantumPure Datalog

Purifier System Status

Manual

Purifier A Enable

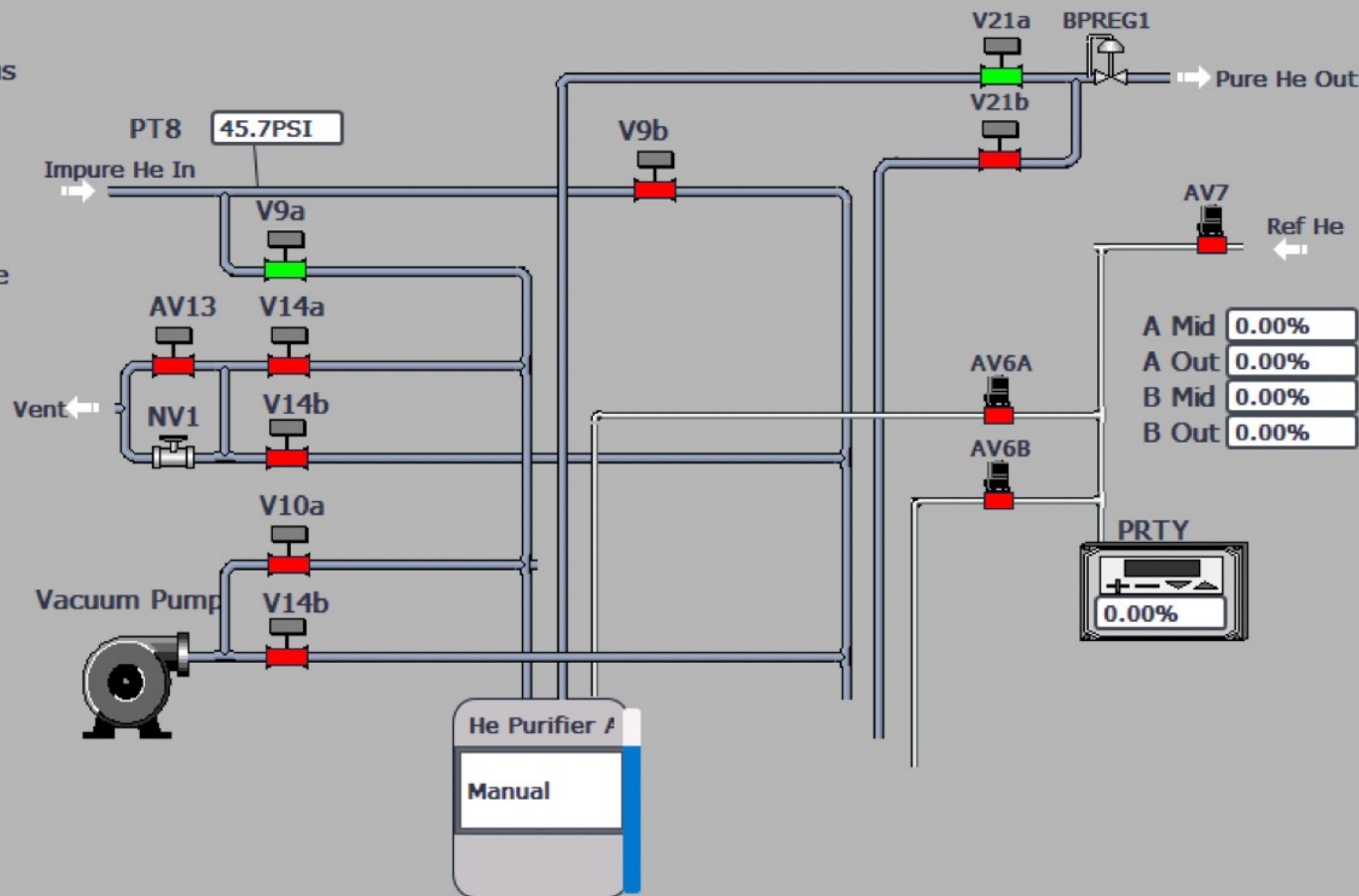
ON

Auto

Manual

On

Off





Operator



Time 2:52:53 PM

QLHe100A

Dewar Cooldown

PurifierA

Manual

HR3

Date 5/27/2022

QLHe100B

Liquefy

PurifierB

Disabled

Off



QuantumPure He Overview

QuantumPure LN2 Overview

QuantumPure Control

QuantumPure Settings

QuantumPure Alarms

QuantumPure Datalog

Controlled By LN2 Overflow Protection Enclosure AV12

LN2 Fill

PTN

GN2

PTA

0.2PSI

PBA

1.2PSI

Level

79.6%

Purifier System Status

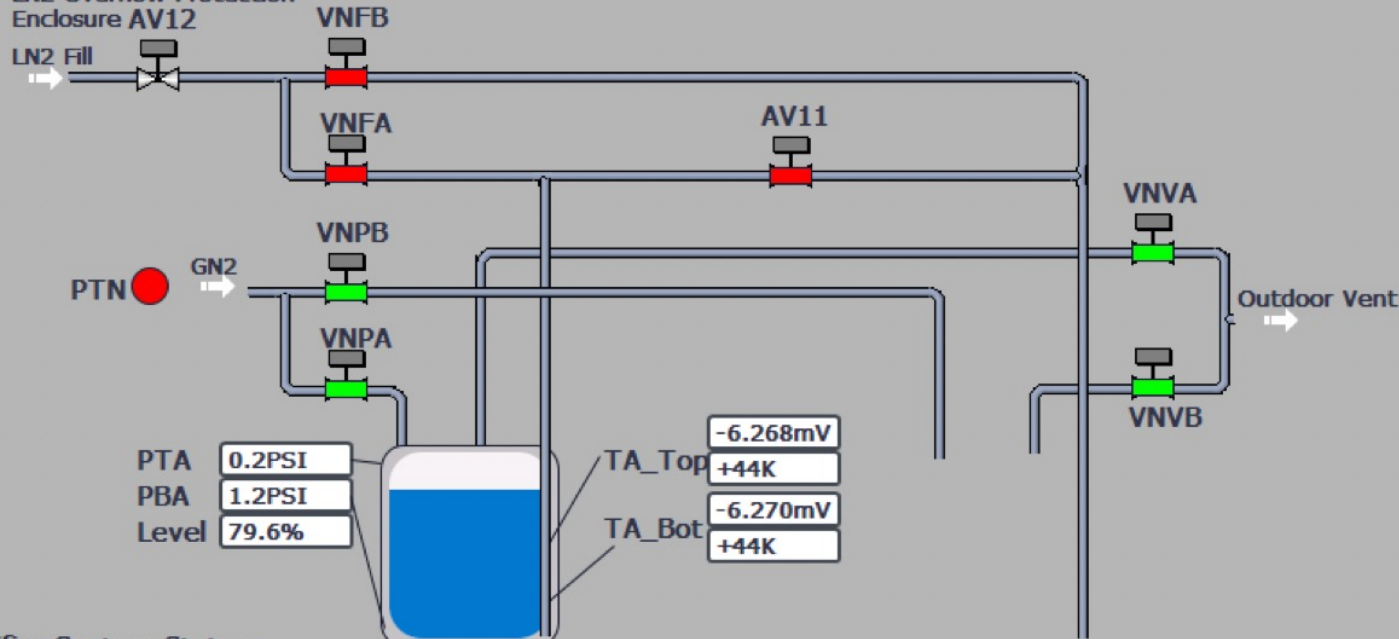
Manual

He Purifier

Manual

Heater MC Cycle

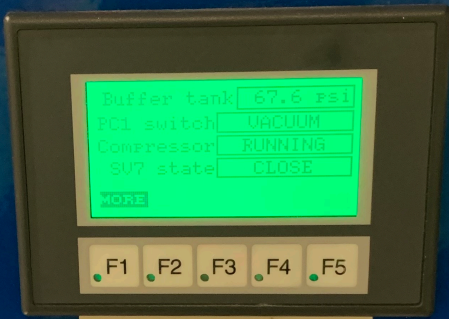
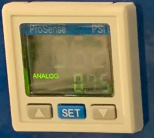
Heater MC Stop at SP



0.55

12.5
120.9
66.9

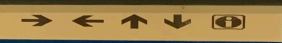
REG3 PSI



MANUAL START



F1 F2 F3 F4 F5



P8



P6



KAESER

www.kaeser.com



P 68 Psi
T 165 °F
6 Off



esc



SIGMA CONTROL BASIC

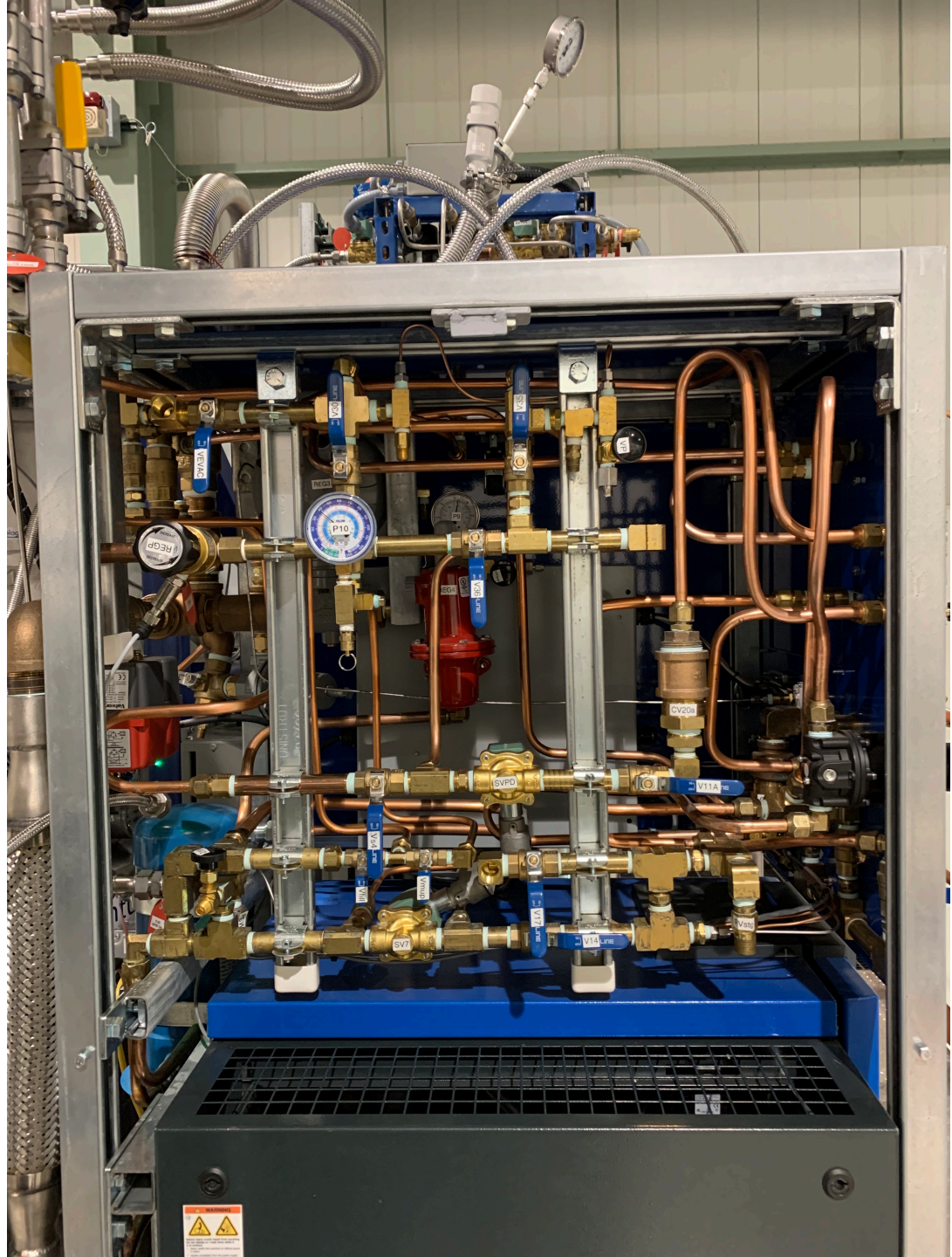
Part No. SM.2
Serial No. 6505

PHP-NM4-4 CIR# 38, 40, 42

480 VOLTS

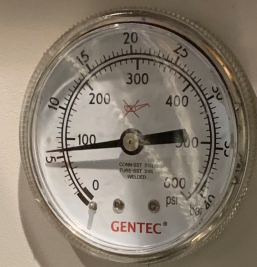


Tank volume: 1600 cubic ft

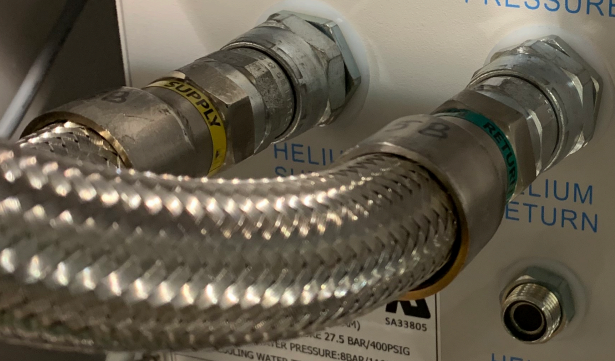




SUPPLY PRESSURE



RETURN PRESSURE



HELIUM CHARGE

APPLICATION	10K GM CRYOCOOLER	4K GM CRYOCOOLER
CHARGE PRESSURE AT 25°C	50Hz 15.0BAR 217PSIG	60Hz 16.0BAR 232PSIG
MINIMUM COOLING WATER FLOW	15.0BAR 217PSIG	16.0BAR 232PSIG
	6.0LPM	6.0LPM

5B



Quantum
Quantum Helium Cryocooler
www.quantumcryo.com



Links to check LCW and HMI parameters

<https://e906-gat1.fnal.gov/data-summary/e1039/target-QT-HMI.php>

<https://e906-gat1.fnal.gov/data-summary/e1039/slow-cont-acnet.php>