


**APPENDIX M – DATASHEETS**

	<b>Level Switch</b>			DATA SHEET NO.		REV.	
				<b>DST-LS-G07504</b>			
	<b>Float</b>			SHEET	1	OF	1
	NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.

0	2022-07-06	Issued For Use	DG	JP	JAB	JAB
1	2022-07-14	Re-issued For Use	NP	AF	JAB	JAB

<b>Project:</b>						
<b>TAG NO:</b>	<b>LS-G07504</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-G208-001	
Asset No:		Spec No:		Line / Vessel Number:	TK-G0750	
Description:	ONE LEVEL FLOAT SWITCH			Manufacturer:	Almeg Controls	
Purchase Order:		P&ID:	1-0101-PPID-G012-001	Model:	SP-Series 1-Level	
Requisition Number:		Vendor:		Size:		Schedule:
		Job Number:				

Fluid:	Ferric Chloride					
Fluid State:	Liquid					

<b>PROCESS CONDITIONS</b>	Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
	Flow:	-	-	-	
	Pressure:	0	0	0	psig
	Temperature:	5	20	35	°C
	Design Pressure:	0	psig	Tank Top Style:	Flat
	Design Temperature:	5 to 35	°C	Tank Bottom Style:	Flat
	Vessel Height:	0.432 m		Width / Length:	1.32 m (52") W x 2.64 m (104") L
	Fluid Dielectric Constant:	N/A		Higher Viscosity:	N/A
	Level Empty:			Ambient Temperature:	20 °C
	Level Full:			Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A				


<b>PROBE</b>	Probe Design:	One - Level probe (High and Low)	Float in dry position (High)	
	Application:	level switch	Float in dry position (Low)	.1 meter (4") (Note 3)
	Function:	Leak Alarm	Stem Overall Length:	.457 meters (18") (Note 3)
	Process Connection:	3/4" NPT Screw (Note 2)	Fail Safe:	Open on fail
	Orientation:	Vertical	Maximum Temperature:	125 °C
	Style:	Note 1	Manufacturer:	Almeg Controls
	Material:	PVC	Model:	SP Sereis (Plastic)
	Switch State:	Normally Open		
	Float:	47mm PP		

<b>AMPLIFIER/SWITCH</b>	Location:		Switch Quantity:	1
	Enclosure Material:		Relay Form:	
	Enclosure:		Rating:	SPST 150VAC/200VDC @ 0.5 amps
	Power Supply:		Load Type:	
	Power Consumption:		Contacts Open on Level:	
	Conduit Size / Connection:		Manufacturer:	Almeg Controls
	Switch Type:	Normally open	Model:	

<b>REMOTE</b>	Output:		Enclosure:	
	Power Supply:		Range:	to

<b>OPTIONS</b>	Compensation Cable:		Stainless Steel Tag:	
	Local Indicator:			

<b>NOTES</b>	1. Complete w/ith a 1/2" NPT facing up NEMA 4 connection head with terminal strip. See attached
	2. Contractor to provide bracket to wall mount 3/4" NPT fitting.
	3. Overall stem length, location of level switch to be confirmed with Mechanical.

	<b>Level Switch</b>			DATA SHEET NO.		REV.	
				<b>DST-LS-G07505</b>			
	<b>Float</b>			SHEET	1	OF	1
	NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.

0	2022-07-06	Issued For Use	DG	JP	JAB	JAB
1	2022-07-14	Re-issued For Use	NP	AF	JAB	JAB

<b>Project:</b>						
<b>TAG NO:</b>	<b>LS-G07505</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-G209-001	
<b>Asset No:</b>		Spec No:		Line / Vessel Number:	TK-G0750	
<b>Description:</b>	ONE LEVEL FLOAT SWITCH			Manufacturer:	Almeg Controls	
<b>Purchase Order:</b>		P&ID:	1-0101-PPID-G012-001	Model:	SP-Series 1-Level	
<b>Requisition Number:</b>		<b>Vendor:</b>		<b>Job Number:</b>		

<b>Fluid:</b>	Ferric Chloride
<b>Fluid State:</b>	Liquid

<b>PROCESS CONDITIONS</b>	<b>Process Data Case (Flow):</b>	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
	<b>Flow:</b>				
	<b>Pressure:</b>	0	0	0	psig
	<b>Temperature:</b>	5	20	35	°C
	<b>Design Pressure:</b>	0	psig	<b>Tank Top Style:</b>	Flat
	<b>Design Temperature:</b>	5 to 35	°C	<b>Tank Bottom Style:</b>	Flat
	<b>Vessel Height:</b>	0.432 m (17")		<b>Width / Length:</b>	1.32 m (52") W x 2.64 m (104") L
	<b>Fluid Dielectric Constant:</b>	N/A		<b>Higher Viscosity:</b>	N/A
	<b>Level Empty:</b>			<b>Ambient Temperature:</b>	20 °C
	<b>Level Full:</b>			<b>Area Classification:</b>	Non Hazardous, Corrosive
<b>Special Condition:</b>	N/A				

<b>PROBE</b>	<b>Probe Design:</b>	One - Level probe (High and Low)	<b>Float in dry position (High)</b>	
	<b>Application:</b>	level switch	<b>Float in dry position (Low)</b>	.1 meter (4") (Note 3)
	<b>Function:</b>	Leak Alarm	<b>Stem Overall Length:</b>	.457 meters (18") (Note 3)
	<b>Process Connection:</b>	3/4" NPT Screw (Note 2)	<b>Fail Safe:</b>	Open on fail
	<b>Orientation:</b>	Vertical	<b>Maximum Temperature:</b>	125 °C
	<b>Style:</b>	Note 1	<b>Manufacturer:</b>	Almeg Controls
	<b>Material:</b>	PVC	<b>Model:</b>	SP Sereis (Plastic)
	<b>Switch State:</b>	Normally Open		
	<b>Float:</b>	47mm PP		

<b>AMPLIFIER/SWITCH</b>	<b>Location:</b>		<b>Switch Quantity:</b>	1
	<b>Enclosure Material:</b>		<b>Relay Form:</b>	
	<b>Enclosure:</b>		<b>Rating:</b>	SPST 150VAC/200VDC @ 0.5 amps
	<b>Power Supply:</b>		<b>Load Type:</b>	
	<b>Power Consumption:</b>		<b>Contacts Open on Level:</b>	
	<b>Conduit Size / Connection:</b>		<b>Manufacturer:</b>	Almeg Controls
	<b>Switch Type:</b>	Normally open	<b>Model:</b>	

<b>REMOTE</b>	<b>Output:</b>		<b>Enclosure:</b>	
	<b>Power Supply:</b>		<b>Range:</b>	to

<b>OPTIONS</b>	<b>Compensation Cable:</b>		<b>Stainless Steel Tag:</b>	
	<b>Local Indicator:</b>			

<b>NOTES</b>	1. Complete w/ith a 1/2" NPT facing up NEMA 4 connection head with terminal strip. See attached
	2. Contractor to provide bracket to wall mount 3/4" NPT fitting.
	3. Overall stem length, location of level switch to be confirmed with Mechanical.



# Level Switch

DATA SHEET NO.

DST-LSHH-G07503,G07501

REV.

0

## Float

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-07-13	Issued For Addendum	NP	AF	<i>JRS</i>	<i>JRS</i>

Project:

TAG NO:

LSH-G07503, LSL-G07501

Serial No:

Spec No:

Loop Wiring Diagrams:

Line / Vessel Number:

1-0101-AILD-G204-001 / 0101-AILD-G205-001

TK-G0750

Asset No:

P&amp;ID:

1-0101-PPID-G012-001

Line ID:

Size:

Schedule:

Description:

TWO LEVEL FLOAT SWITCH

Manufacturer:

Almeg Controls

Model:

SP-Series Multi-Level

Purchase Order:

Vendor:

Requisition Number:

Job Number:

PROCESS CONDITIONS

Fluid:	Ferric Chloride
Fluid State:	Liquid

Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:				
Pressure:	0	0	0	psig
Temperature:	5	20	35	°C

Design Pressure:	0	psig	Tank Top Style:	Flat
Design Temperature:	5 to 35	°C	Tank Bottom Style:	Flat
Vessel Height:	1.5748 m		Width / Diameter:	0.8636 m
Fluid Dielectric Constant:	N/A		Higher Viscosity:	N/A
Level Empty:	0 meters		Ambient Temperature:	20 °C
Level Full:	1.219 meters		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

PROBE

Probe Design:	Two - Level probe (High and Low)	Float in dry position (High)	.1 meter (4") (Note 3)
Application:	High and Low level switch	Float in dry position (Low)	1.117 meters (44") (Note 3)
Function:	Alarm	Stem Overall Length:	1.194 meters (47") (Note 3)
Process Connection:	2" NPT Screw (Note 2)	Fail Safe:	Open on fail
Orientation:	Vertical	Maximum Temperature:	125 °C
Style:	Note 1	Manufacturer:	Almeg Controls
Material:	PVC	Model:	SP Sereis (Plastic)
Switch State:	Normally Open		
Float:	47mm PP		

AMPLIFIER/SWITCH

Location:		Switch Quantity:	2
Enclosure Material:		Relay Form:	
Enclosure:		Rating:	SPST 150VAC/200VDC @ 0.5 amps
Power Supply:		Load Type:	
Power Consumption:		Contacts Open on Level:	
Conduit Size / Connection:		Manufacturer:	Almeg Controls
Switch Type:	Normally open	Model:	

REMOTE

Output:		Enclosure:	
Power Supply:		Range:	to

OPTIONS

Compensation Cable:		Stainless Steel Tag:	
Local Indicator:			

NOTES

1. Complete with a 1/2" NPT facing up NEMA 4 connection head with terminal strip. See attached
2. Contractor to drill and tap top of tank to mount 2" NPT size fitting.
3. Overall stem length, location of high and low level switch to be confirmed with Mechanical.



# Level Switch

DATA SHEET NO.

REV.

DST-LSH-Y07903, Y0707901

1

## Float

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-07-13	Issued For Addendum	NP	AF	JMS	JMS

Project:

TAG NO:

LSH-Y07903, LSL-Y07901

Serial No:

Spec No:

Loop Wiring Diagrams:

Line / Vessel Number:

1-0101-AILD-Y203-001 / 0101-AILD-Y204-001

TK-Y0790

Asset No:

P&amp;ID:

1-0101-PPID-Y001-001

Line ID:

Size:

Schedule:

Description:

TWO LEVEL FLOAT SWITCH

Manufacturer:

Model:

Almeg Controls

SP-Series Multi-Level

Purchase Order:

Vendor:

Requisition Number:

Job Number:

PROCESS CONDITIONS

Fluid:	Ferric Chloride
Fluid State:	Liquid

Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:				
Pressure:	0	0	0	psig
Temperature:	5	20	35	°C

Design Pressure:	0	psig	Tank Top Style:	Flat
Design Temperature:	5 to 35	°C	Tank Bottom Style:	Flat
Vessel Height:	1.5748 m		Width / Diameter:	0.8636 meters
Higher SG / Density:	N/A		Higher Viscosity:	N/A
Level Empty:	0 meters		Ambient Temperature:	20 °C
Level Full:	1.219 meters		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

PROBE

Probe Design:	Two - Level probe (High and Low)	Float in dry position (High)	.1 meter (4") (Note 3)
Application:	High and Low level switch	Float in dry position (Low)	1.117 meters (44") (Note 3)
Function:	Alarm	Stem Overall Length:	1.194 meters (47") (Note 3)
Process Connection:	2" NPT Screw (Note 2)	Fail Safe:	Open on fail
Orientation:	Vertical	Maximum Temperature:	125 °C
Style:	Note 1	Manufacturer:	Almeg Controls
Material:	PVC	Model:	SP Sereis (Plastic)
Switch State:	Normally Open		
Float:	47mm PP		

AMPLIFIER/SWITCH

Location:		Switch Quantity:	2
Enclosure Material:		Relay Form:	
Enclosure:		Rating:	SPST 150VAC/200VDC @ 0.5 amps
Power Supply:		Load Type:	
Power Consumption:		Contacts Open on Level:	
Conduit Size / Connection:		Manufacturer:	Almeg Controls
Switch Type:	Normally open	Model:	

REMOTE

Output:		Enclosure:	
Power Supply:		Range:	to

OPTIONS

Compensation Cable:		Stainless Steel Tag:	
Local Indicator:			

NOTES

- Complete with a 1/2" NPT facing up NEMA 4 connection head with terminal strip. See attached
- Contractor to drill and tap top of tank to mount 2" NPT size fitting.
- Overall stem length, location of high and low level switch to be confirmed with Mechanical.



# Level Switch

DATA SHEET NO.

DST-LS-Y07904

REV.

1

## Float

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2010-07-06	Issued For Use	DG	JP	JAB	JAB
1	2022-07-13	Re-issued For Use	NP	AF	JAB	JAB

Project:

TAG NO:

LS-Y07904

Serial No:

Loop Wiring Diagrams:

1-0101-AILD-Y207-001

Spec No:

Line / Vessel Number:

TK-Y0790

Asset No:

P&ID:

1-0101-PPID-Y001-001

Line ID:

Size:

Schedule:

Description:

ONE LEVEL FLOAT SWITCH

Manufacturer:

Almeg Controls

Model:

SP-Series 1-Level

Purchase Order:

Vendor:

Requisition Number:

Job Number:

PROCESS CONDITIONS

Fluid:	Ferric Chloride
Fluid State:	Liquid

Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:				
Pressure:	0	0	0	psig
Temperature:	5	20	35	°C

Design Pressure:	0	psig	Tank Top Style:	Flat
Design Temperature:	5 to 35	°C	Tank Bottom Style:	Flat
Vessel Height:	0.432 m (17")		Width / Length:	1.32 m (52") W x 2.64 m (104") L
Fluid Dielectric Constant:	N/A		Higher Viscosity:	N/A
Level Empty:			Ambient Temperature:	20 °C
Level Full:			Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

PROBE

Probe Design:	One - Level probe (High and Low)	Float in dry position (High)	
Application:	level switch	Float in dry position (Low)	.1 meter (4") (Note 3)
Function:	Leak Alarm	Stem Overall Length:	.457 meters (18") (Note 3)
Process Connection:	3/4" NPT Screw (Note 2)	Fail Safe:	Open on fail
Orientation:	Vertical	Maximum Temperature:	125 °C
Style:	Note 1	Manufacturer:	Almeg Controls
Material:	PVC	Model:	SP Sereis (Plastic)
Switch State:	Normally Open		
Float:	47mm PP		

AMPLIFIER/SWITCH

Location:		Switch Quantity:	1
Enclosure Material:		Relay Form:	
Enclosure:		Rating:	SPST 150VAC/200VDC @ 0.5 amps
Power Supply:		Load Type:	
Power Consumption:		Contacts Open on Level:	
Conduit Size / Connection:		Manufacturer:	Almeg Controls
Switch Type:	Normally open	Model:	

REMOTE

Output:		Enclosure:	
Power Supply:		Range:	to

OPTIONS

Compensation Cable:		Stainless Steel Tag:	
Local Indicator:			

NOTES

1. Complete with a 1/2" NPT facing up NEMA 4 connection head with terminal strip. See attached
2. Contractor to provide bracket to wall mount 3/4" NPT fitting.
3. Overall stem length and location of level switch to be confirmed with Mechanical.



# Level Switch

DATA SHEET NO.

DST-LS-Y07905

REV.

0

## Float

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2010-07-06	Issued For Use	DG	JP	JAB	JAB
1	2022-07-13	Re-Issued For Use	NP	AF	JAB	JAB

Project:

TAG NO:

LS-Y07905

Serial No:

Spec No:

Loop Wiring Diagrams:

Line / Vessel Number:

1-0101-AILD-Y208-001

TK-Y0790

Asset No:

P&ID:

1-0101-PPID-Y001-001

Line ID:

Size:

Schedule:

Description:

ONE LEVEL FLOAT SWITCH

Manufacturer:

Model:

Almeg Controls

SP-Series 1-Level

Purchase Order:

Vendor:

Requisition Number:

Job Number:

PROCESS CONDITIONS

Fluid:	Ferric Chloride
Fluid State:	Liquid

Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:				
Pressure:	0	0	0	psig
Temperature:	5	20	35	°C

Design Pressure:	0	psig	Tank Top Style:	Flat
Design Temperature:	5 to 35	°C	Tank Bottom Style:	Flat
Vessel Height:	0.432 m (17")		Width / Length:	1.32 m (52") W x 2.64 m (104") L
Fluid Dielectric Constant:	N/A		Higher Viscosity:	N/A
Level Empty:			Ambient Temperature:	20 °C
Level Full:			Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

PROBE

Probe Design:	One - Level probe (High and Low)	Float in dry position (High)	
Application:	level switch	Float in dry position (Low)	.1 meter (4") (Note 3)
Function:	Leak Alarm	Stem Overall Length:	.457 meters (18") (Note 3)
Process Connection:	3/4" NPT Screw (Note 2)	Fail Safe:	Open on fail
Orientation:	Vertical	Maximum Temperature:	125 °C
Style:	Note 1	Manufacturer:	Almeg Controls
Material:	PVC	Model:	SP Sereis (Plastic)
Switch State:	Normally Open		
Float:	47mm PP		

AMPLIFIER/SWITCH

Location:		Switch Quantity:	1
Enclosure Material:		Relay Form:	
Enclosure:		Rating:	SPST 150VAC/200VDC @ 0.5 amps
Power Supply:		Load Type:	
Power Consumption:		Contacts Open on Level:	
Conduit Size / Connection:		Manufacturer:	Almeg Controls
Switch Type:	Normally open	Model:	

REMOTE


Output:		Enclosure:	
Power Supply:		Range:	to

OPTIONS

Compensation Cable:		Stainless Steel Tag:	
Local Indicator:			

NOTES

1. Complete with a 1/2" NPT facing up NEMA 4 connection head with terminal strip. See attached
2. Contractor to provide bracket to wall mount 3/4" NPT fitting.
3. Overall stem length and location of level switch to be confirmed with Mechanical.

	<b>Analyzer Instrument</b> <b>Carbon Monoxide</b>			DATA SHEET NO.		REV.	
				DST-AIT-F8800		0	
	NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
	0	2022 14 07	Issued for Addendum	DG	JP	<i>JPB</i>	<i>JPB</i>
Project: <b>21-0107-015</b>							
TAG NO:	<b>AIT-F8800</b>	Serial No:	Loop Wiring Diagrams:		1-0101-AILD-F266-001		
		Spec No:	Line / Vessel Number:				
Asset No:		P&ID:	1-0101-PPID-F005-001	Line ID:	Size:	Schedule:	
Description:	Transmitter for Carbon Monoxide (Room 101B)		Manufacturer:	MSA			
			Model:	Ultima X5000 (Note 1,2)			
Purchase Order:		Vendor:	Tundra Process Solutions (Note 1)				
Requisition Number:		Job Number:					

Fluid:	
Fluid State:	

PROCESS CONDITIONS	Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
	Pressure:				
	Temperature:				
	Design Pressure:	150	Psig	Vapor Pressure Pv:	N/A
	Design Temperature:	10 to 50	°C	Viscosity:	N/A
	SG / Density:	N/A		Compressibility (Z):	N/A
	Pipe Material:			Coating/Abrading:	N/A
	Ambient Temperature:	20°C		Area Classification:	Non Hazardous, Corrosive
	% Solids:	N/A		Special Condition:	N/A


TRANSMITTER	Stainless Steel Tag:	AIT-F8800	Response Time:	11 sec		
	Application:	Gas Monitoring	Temp Compensation:			
	Type:	LCD Display	Max Distance to Element:			
	Enclosure Class:	NEMA 4X	Approvals:	CSA, ATEX, IECEX, CE Marking		
	Enclosure Material:		Instrument Range:	0	to	95 %RH
	Mounting:	Integral	Calibration Range:			
	Signal / Protocol:	4-20 mA	Controller Display Range:			
	Power Supply Voltage:	24VDC	Allowable Pressure:			
	Electrical Connection:	3/4" NPT	Operating Temperature:	-40	to	+60 °C
	Output @ Tx Failure:		Make:	MSA		
Accuracy:	+/- 3%	Model:	Ultima X5000 (Note 2)			

ELEMENT	Sensor Type:	Carbon Monoxide	O-Ring Material:			
	Body Material:		Electrical Approval:			
	Electrode Material:		Cell Constant:			
	Insulation Material:		Max Flow Rate:			
	Process Connection:		Standard:			
	Transmitter Connection:		Temp. Compensation:			
	Mounting Accessory:		Measuring Range:	0	to	1000 PPM
	Insertion Depth:		Manufacturer:	MSA		
	Temperature Sensor:		Model:	XCell Toxic		

SAMPLE SYSTEM	Line No:		Outlet Pressure:			
	Tap Size:		Filter(s):			
	Loop Flow / Indicator:		Tubing:			
	Loop Flow Controller:		Cooler Required:			
	Loop Flow:		Material:			
	Loop Temperature:		Hand Valve(s):			
	Loop Pressure:		Cycle Time:			
	Low Flow Cell:		Analysis Time:			

NOTES	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
	2. Transmitter to include with two output relays.



	<b>Analyzer Instrument</b> <b>Carbon Monoxide</b>			DATA SHEET NO.		REV.	
				DST-AIT-F8801		0	
	NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
	0	2022 14 07	Issued for Addendum	DG	JP	<i>JPB</i>	<i>JPB</i>
Project: <b>21-0107-015</b>							
TAG NO:	<b>AIT-F8801</b>	Serial No:	Loop Wiring Diagrams:		1-0101-AILD-F265-001		
		Spec No:	Line / Vessel Number:				
Asset No:		P&ID:	1-0101-PPID-F005-001	Line ID:	Size:	80mm Schedule: 80	
Description:	Transmitter for Carbon Monoxide (Room 101C)		Manufacturer:	MSA			
			Model:	Ultima X5000 (Note 1,2)			
Purchase Order:		Vendor:	Tundra Process Solutions (Note 1)				
Requisition Number:		Job Number:					


Fluid:					
Fluid State:					
PROCESS CONDITIONS	Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
	Pressure:				
	Temperature:				
	Design Pressure:	150	Psig	Vapor Pressure Pv:	N/A
	Design Temperature:	10 to 50	°C	Viscosity:	N/A cP
	SG / Density:	N/A		Compressibility (Z):	N/A
	Pipe Material			Coating/Abrading:	N/A
	Ambient Temperature:	20°C		Area Classification:	Non Hazardous, Corrosive
	% Solids:	N/A		Special Condition:	N/A

TRANSMITTER	Stainless Steel Tag:	AIT-F8800	Response Time:	11 sec		
	Application:	Gas Monitoring	Temp Compensation:			
	Type:	LCD Display	Max Distance to Element:			
	Enclosure Class:	NEMA 4X	Approvals:	CSA, ATEX, IECEX, CE Marking		
	Enclosure Material:		Instrument Range:	0	to	95 %RH
	Mounting:	Integral	Calibration Range:			
	Signal / Protocol:	4-20 mA	Controller Display Range:			
	Power Supply Voltage:	24VDC	Allowable Operating Pressure:			
	Electrical Connection:	3/4" NPT	Operating Temperature:	-40	to	+60 °C
	Output @ Tx Failure:		Make:	MSA		
Accuracy:	+/- 3%	Model:	Ultima X5000 (Note 2)			

ELEMENT	Sensor Type:	Carbon Monoxide	O-Ring Material:			
	Body Material		Electrical Approval:			
	Electrode Material:		Cell Constant:			
	Insulation Material:		Max Flow Rate:			
	Process Connection:		Standard:			
	Transmitter Connection:		Temp. Compensation:			
	Mounting Accessory:		Measuring Range:	0	to	1000 PPM
	Insertion Depth:		Manufacturer:	MSA		
	Temperature Sensor:		Model:	XCell Toxic		

SAMPLE SYSTEM	Line No:		Outlet Pressure:			
	Tap Size:		Filter(s):			
	Loop Flow / Indicator:		Tubing:			
	Loop Flow Controller:		Cooler Required:			
	Loop Flow:		Material:			
	Loop Temperature:		Hand Valve(s)			
	Loop Pressure:		Cycle Time:			
	Low Flow Cell:		Analysis Time:			

NOTES	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
	2. Transmitter to include with two output relays.

	<b>Analyzer Instrument</b> <b>Carbon Monoxide</b>			DATA SHEET NO.		REV.	
				DST-AIT-F8802		0	
	NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
	0	2022 14 07	Issued for Addendum	DG	JP	<i>JPB</i>	<i>JPB</i>
Project: <b>21-0107-015</b>							
TAG NO:	<b>AIT-F8802</b>	Serial No:	Loop Wiring Diagrams:		1-0101-AILD-F264-001		
		Spec No:	Line / Vessel Number:				
Asset No:		P&ID:	1-0101-PPID-F008-001	Line ID:	Size:	Schedule:	
Description:	Transmitter for Carbon Monoxide (Building 102)		Manufacturer:	MSA			
			Model:	Ultima X5000 (Note 1,2)			
Purchase Order:		Vendor:	Tundra Process Solutions (Note 1)				
Requisition Number:		Job Number:					

Fluid:					
Fluid State:					
PROCESS CONDITIONS	Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
	Pressure:				
	Temperature:				
	Design Pressure:	150	Psig	Vapor Pressure Pv:	N/A
	Design Temperature:	10 to 50	°C	Viscosity:	N/A
	SG / Density:	N/A		Compressibility (Z):	N/A
	Pipe Material			Coating/Abrading:	N/A
Ambient Temperature:	20°C		Area Classification:	Non Hazardous, Corrosive	
% Solids:	N/A		Special Condition:	N/A	

TRANSMITTER	Stainless Steel Tag:	AIT-F8800	Response Time:	11 sec		
	Application:	Gas Monitoring	Temp Compensation:			
	Type:	LCD Display	Max Distance to Element:			
	Enclosure Class:	NEMA 4X	Approvals:	CSA, ATEX, IECEX, CE Marking		
	Enclosure Material:		Instrument Range:	0	to	95 %RH
	Mounting:	Integral	Calibration Range:			
	Signal / Protocol:	4-20 mA	Controller Display Range:			
	Power Supply Voltage:	24VDC	Allowable Pressure:			
	Electrical Connection:	3/4" NPT	Operating Temperature:	-40	to	+60 °C
	Output @ Tx Failure:		Make:	MSA		
Accuracy:	+/- 3%	Model:	Ultima X5000 (Note 2)			

ELEMENT	Sensor Type:	Carbon Monoxide	O-Ring Material:			
	Body Material		Electrical Approval:			
	Electrode Material:		Cell Constant:			
	Insulation Material:		Max Flow Rate:			
	Process Connection:		Standard:			
	Transmitter Connection:		Temp. Compensation:			
	Mounting Accessory:		Measuring Range:	0	to	1000 PPM
	Insertion Depth:		Manufacturer:			
	Temperature Sensor:		Model:			

SAMPLE SYSTEM	Line No:		Outlet Pressure:			
	Tap Size:		Filter(s):			
	Loop Flow / Indicator:		Tubing:			
	Loop Flow Controller:		Cooler Required:			
	Loop Flow:		Material:			
	Loop Temperature:		Hand Valve(s)			
	Loop Pressure:		Cycle Time:			
	Low Flow Cell:		Analysis Time:			

NOTES	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
	2. Transmitter to include with two output relays.



## Flowmeter Instrument

Magnetic

DATA SHEET NO. **DST-FIT-F07703** REV. **0**

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022 18 05	Issued for Construction	DG	JP		

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>FIT-F07703</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F223-001	
		Spec No:		Line / Vessel Number:	15-FC-PV04-0722	
<b>Asset No:</b>		P&ID:	1-0101-PPID-F007-001	Line ID:	Size:	15mm Schedule:
<b>Description:</b>	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION			Manufacturer:	Siemens	
				Model:	Sitrans F M Mag 6000 & F M Mag 1100	
<b>Purchase Order:</b>		<b>Vendor:</b>	Trans-West			
<b>Requisition Number:</b>		<b>Job Number:</b>				

PROCESS CONDITIONS

Fluid:	Ferric Chloride				
Fluid State:	Liquid				
<b>Process Data Case (Flow):</b>	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
Flow:	8	167	792	L/hr	
Pressure:	60	60	60	psig	
Temperature:	0	20	30	°C	
Design Pressure:	150	psig	Vapor Pressure Pv:	N/A	
Design Temperature:	-10 to 50	°C	Viscosity:	N/A	
Lower SG / Density:	1.39		Compressibility (Z):	N/A	
Higher SG / Density:	1.46		Special Condition:	N/A	
Pipe Material	PVC				

METER

Connection Size:		Mounting Orientation:			
End Connection:		Mounting Kit:			
End Connection Material:		Flange / Wafer Rating:	Note 2		
Lining Material:	Note 2	Flange Type:			
Lining Protector:	Note 2	Flange Material:			
Electrode Type:	Note 2	Allow. Operating Velocity:		to	
Electrode Material:	Note 2	Enclosure Class:	NEMA 4X		
Grounding Rings:		Element Model Number:	Note 2		

TRANSMITTER

Stainless Steel Tag:	FIT-F07703	Wetted O-Ring Material:			
Application:		Fill Fluid:			
Type:		Elevation:			
Enclosure Class:	NEMA 4X	Suppression:			
Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:		to	
Mounting:	Local	Calibration Range:		to	
Signal / Protocol:	Profibus PA (Note3)	Controller Display Range:		to	
Power Supply:	24 VDC	Static Pressure Range:		to	
Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:		to	
Accuracy:	0.25%	Allow. Oper Temperature:		to	
Response Time:		Maximum Static Pressure			
Element Material:		Manufacturer:	Siemens		
		Model:	Sitran F M Mag Series 6000		

OPTION

Integral Meter:		Hydrostatic Testing:			
Scale:		Mounting Brackets:			

NOTES

1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
2. Information to be provided by Vendor.
3. Complete with option Card Profibus PA Module



## Flowmeter Instrument

### Magnetic

DATA SHEET NO. **DST-FIT-F07713** REV. **0**

SHEET **1** OF **1**

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022 18 05	Issued for Construction	DG	JP		

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>FIT-F07713</b>	Serial No:	Loop Wiring Diagrams:	1-0101-AILD-F224-001		
		Spec No:	Line / Vessel Number:	15-FC-PV04-0723		
<b>Asset No:</b>		P&ID:	1-0101-PPID-F007-001	Line ID:	Size:	15mm Schedule:
<b>Description:</b>	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION		Manufacturer:	Siemens		
			Model:	Sitrans F M Mag 6000 & F M Mag 1100		
<b>Purchase Order:</b>		<b>Vendor:</b>	Trans-West			
<b>Requisition Number:</b>		<b>Job Number:</b>				

PROCESS CONDITIONS

Fluid:	Ferric Chloride				
Fluid State:	Liquid				
<b>Process Data Case (Flow):</b>	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
Flow:	8	167	792	L/hr	
Pressure:	60	60	60	psig	
Temperature:	0	20	30	°C	
Design Pressure:	150	psig	Vapor Pressure Pv:	N/A	
Design Temperature:	-10 to 50	°C	Viscosity:	N/A	
Lower SG / Density:	1.39		Compressibility (Z):	N/A	
Higher SG / Density:	1.46		Special Condition:	N/A	
Pipe Material	PVC				

METER

Connection Size:		Mounting Orientation:			
End Connection:		Mounting Kit:			
End Connection Material:		Flange / Wafer Rating:	Note 2		
Lining Material:	Note 2	Flange Type:			
Lining Protector:	Note 2	Flange Material:			
Electrode Type:	Note 2	Allow. Operating Velocity:		to	
Electrode Material:	Note 2	Enclosure Class:	NEMA 4X		
Grounding Rings:		Element Model Number:	Note 2		

TRANSMITTER

Stainless Steel Tag:	FIT-F07713	Wetted O-Ring Material:			
Application:		Fill Fluid:			
Type:		Elevation:			
Enclosure Class:	NEMA 4X	Suppression:			
Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:		to	
Mounting:	Local	Calibration Range:		to	
Signal / Protocol:	Profibus PA (Note3)	Controller Display Range:		to	
Power Supply:	24 VDC	Static Pressure Range:		to	
Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:		to	
Accuracy:	0.25%	Allow. Oper Temperature:		to	
Response Time:		Maximum Static Pressure			
Element Material:		Manufacturer:	Siemens		
		Model:	Sitran F M Mag Series 6000		

OPTION

Integral Meter:		Hydrostatic Testing:			
Scale:		Mounting Brackets:			

NOTES

1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
2. Information to be provided by Vendor.
3. Complete with option Card Profibus PA Module



## Flowmeter Instrument

Magnetic

DATA SHEET NO. **DST-FIT-F07723** REV. **0**

SHEET **1** OF **1**

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022 18 05	Issued for Construction	DG	JP		

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>FIT-F07723</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F225-001	
		Spec No:		Line / Vessel Number:	15-FC-PV04-0724	
<b>Asset No:</b>		P&ID:	1-0101-PPID-F007-001	Line ID:	Size:	15mm Schedule:
<b>Description:</b>	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION			Manufacturer:	Siemens	
				Model:	Sitrans F M Mag 6000 & F M Mag 1100	
<b>Purchase Order:</b>		<b>Vendor:</b>	Trans-West			
<b>Requisition Number:</b>		<b>Job Number:</b>				

PROCESS CONDITIONS

Fluid:	Ferric Chloride				
Fluid State:	Liquid				
<b>Process Data Case (Flow):</b>	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
Flow:	8	167	792	L/hr	
Pressure:	60	60	60	psig	
Temperature:	0	20	30	°C	
Design Pressure:	150	psig	Vapor Pressure Pv:	N/A	
Design Temperature:	-10 to 50	°C	Viscosity:	N/A	
Lower SG / Density:	1.39		Compressibility (Z):	N/A	
Higher SG / Density:	1.46		Special Condition:	N/A	
Pipe Material	PVC				

METER

Connection Size:		Mounting Orientation:			
End Connection:		Mounting Kit:			
End Connection Material:		Flange / Wafer Rating:	Note 2		
Lining Material:	Note 2	Flange Type:			
Lining Protector:	Note 2	Flange Material:			
Electrode Type:	Note 2	Allow. Operating Velocity:		to	
Electrode Material:	Note 2	Enclosure Class:	NEMA 4X		
Grounding Rings:		Element Model Number:	Note 2		

TRANSMITTER

Stainless Steel Tag:	FIT-F07723	Wetted O-Ring Material:			
Application:		Fill Fluid:			
Type:		Elevation:			
Enclosure Class:	NEMA 4X	Suppression:			
Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:		to	
Mounting:	Local	Calibration Range:		to	
Signal / Protocol:	Profibus PA (Note3)	Controller Display Range:		to	
Power Supply:	24 VDC	Static Pressure Range:		to	
Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:		to	
Accuracy:	0.25%	Allow. Oper Temperature:		to	
Response Time:		Maximum Static Pressure			
Element Material:		Manufacturer:	Siemens		
		Model:	Sitran F M Mag Series 6000		

OPTION

Integral Meter:		Hydrostatic Testing:			
Scale:		Mounting Brackets:			

NOTES

1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
2. Information to be provided by Vendor.
3. Complete with option Card Profibus PA Module



## Flowmeter Instrument

### Magnetic

DATA SHEET NO. **DST-FIT-F08303** REV. **0**

SHEET **1** OF **1**

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022 18 05	Issued for Construction	DG	JP		

**Project: 21-0107-015**

<b>TAG NO:</b>	<b>FIT-F08303</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AIFS-F202-001	
Asset No:		Spec No:		Line / Vessel Number:	15-SHD-PV04-0817	
Description:	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION			Manufacturer:	Siemens	
Purchase Order:		P&ID:	1-0101-PPID-F008-001	Model:	Sitrans F M Mag 6000 & F M Mag 1100	
Requisition Number:		Vendor:			Trans-West	
		Job Number:				

**PROCESS CONDITIONS**

Fluid:	Sodium Hydroxide				
Fluid State:	Liquid				
Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
Flow:	8	67	792	L/hr	
Pressure:	60	60	60	psig	
Temperature:	15	20	30	°C	
Design Pressure:	150	psig	Vapor Pressure Pv:	N/A	
Design Temperature:	10 to 50	°C	Viscosity:	36 cP	
Lower SG / Density:	N/A		Compressibility (Z):	N/A	
Higher SG / Density:	1.53		Special Condition:	N/A	
Pipe Material	PVC				

**METER**

Connection Size:		Mounting Orientation:	
End Connection:		Mounting Kit:	
End Connection Material:		Flange / Wafer Rating:	Note 2
Lining Material:	Note 2	Flange Type:	Note 2
Lining Protector:	Note 2	Flange Material:	Note 2
Electrode Type:	Note 2	Allow. Operating Velocity:	to
Electrode Material:	Note 2	Enclosure Class:	NEMA 4X
Grounding Rings:		Element Model Number:	Note 2

**TRANSMITTER**


Stainless Steel Tag:	FIT-F08303	Wetted O-Ring Material:	
Application:		Fill Fluid:	
Type:		Elevation:	
Enclosure Class:	NEMA 4X	Suppression:	
Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:	to
Mounting:	Local	Calibration Range:	to
Signal / Protocol:	Profibus PA (Note3)	Controller Display Range:	to
Power Supply:	24 VDC	Static Pressure Range:	to
Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:	to
Accuracy:	0.25%	Allow. Oper Temperature:	to
Response Time:		Maximum Static Pressure	
Element Material:		Manufacturer:	Siemens
		Model:	Sitran F M Mag Series 6000

**OPTION**

Integral Meter:		Hydrostatic Testing:	
Scale:		Mounting Brackets:	

**NOTES**

1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
2. Information to be provided by Vendor.
3. Complete with option Card Profibus PA Module

		<b>Flowmeter Instrument</b> <b>Magnetic</b>				DATA SHEET NO.		REV.
						DST-FIT-F08313		0
		NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
		0	2022 18 05	Issued for Construction	DG	JP		
<b>Project:</b>	<b>21-0107-015</b>							
<b>TAG NO:</b>	<b>FIT-F08313</b>	Serial No:			Loop Wiring Diagrams:	1-0101-AIFS-F202-001		
<b>Asset No:</b>		Spec No:			Line / Vessel Number:	15-SHD-PV04-0818		
<b>Description:</b>	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION			P&ID:	1-0101-PPID-F008-001	Line ID:	Size: 15mm Schedule:	
<b>Purchase Order:</b>				Manufacturer:	Siemens			
<b>Requisition Number:</b>				Model:	Sitrans F M Mag 6000 & F M Mag 1100			
				Vendor:	Trans-West			
				Job Number:				
<b>PROCESS CONDITIONS</b>	Fluid:	Sodium Hydroxide						
	Fluid State:	Liquid						
	Process Data Case (Flow):	Minimum:	Normal (Operating):		Maximum (Full Scale):		Units:	
	Flow:	8	67		792		L/hr	
	Pressure:	60	60		60		psig	
	Temperature:	15	20		30		°C	
	Design Pressure:	150	psig	Vapor Pressure Pv:	N/A			
	Design Temperature:	10 to 50	°C	Viscosity:	36		cP	
	Lower SG / Density:	N/A		Compressibility (Z):	N/A			
	Higher SG / Density:	1.53		Special Condition:	N/A			
Pipe Material	PVC							
<b>METER</b>	Connection Size:			Mounting Orientation:				
	End Connection:			Mounting Kit:				
	End Connection Material:			Flange / Wafer Rating:	Note 2			
	Lining Material:	Note 2		Flange Type:	Note 2			
	Lining Protector:	Note 2		Flange Material:	Note 2			
	Electrode Type:	Note 2		Allow. Operating Velocity:		to		
	Electrode Material:	Note 2		Enclosure Class:	NEMA 4X			
	Grounding Rings:			Element Model Number:	Note 2			
<b>TRANSMITTER</b>	Stainless Steel Tag:	FIT-F08313		Wetted O-Ring Material:				
	Application:			Fill Fluid:				
	Type:			Elevation:				
	Enclosure Class:	NEMA 4X		Suppression:				
	Housing:	Fiberglass-Reinforced Polyimide		Instrument Range:		to		
	Mounting:	Local		Calibration Range:		to		
	Signal / Protocol:	Profibus PA (Note3)		Controller Display Range:		to		
	Power Supply:	24 VDC		Static Pressure Range:		to		
	Electrical Connection:	4x1/2" NPT		Allow. Oper Pressure:		to		
	Accuracy:	0.25%		Allow. Oper Temperature:		to		
	Response Time:			Maximum Static Pressure				
	Element Material:			Manufacturer:	Siemens			
				Model:	Sitran F M Mag Series 6000			
<b>OPTION</b>	Integral Meter:			Hydrostatic Testing:				
	Scale:			Mounting Brackets:				
<b>NOTES</b>	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.							
	2. Information to be provided by Vendor.							
	3. Complete with option Card Profibus PA Module							



## Flowmeter Instrument

Magnetic

DATA SHEET NO. **DST-FIT-F08323** REV. **0**

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022 18 05	Issued for Construction	DG	JP		

**Project: 21-0107-015**

<b>TAG NO:</b>	<b>FIT-F08323</b>	Serial No:	Loop Wiring Diagrams:	1-0101-AIFS-F202-001		
		Spec No:	Line / Vessel Number:	15-SHD-PV04-0818		
<b>Asset No:</b>		P&ID:	1-0101-PPID-F008-001	Line ID:	Size:	15mm Schedule:
<b>Description:</b>	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION			Manufacturer:	Siemens	
				Model:	Sitrans F M Mag 6000 & F M Mag 1100	
<b>Purchase Order:</b>		<b>Vendor:</b>	Trans-West			
<b>Requisition Number:</b>		<b>Job Number:</b>				

PROCESS CONDITIONS

Fluid:	Sodium Hydroxide				
Fluid State:	Liquid				
<b>Process Data Case (Flow):</b>	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
Flow:	8	67	792	L/hr	
Pressure:	60	60	60	psig	
Temperature:	15	20	30	°C	
Design Pressure:	150	psig	Vapor Pressure Pv:	N/A	
Design Temperature:	10 to 50	°C	Viscosity:	36	cP
Lower SG / Density:	N/A		Compressibility (Z):	N/A	
Higher SG / Density:	1.53		Special Condition:	N/A	
Pipe Material	PVC				

METER

Connection Size:		Mounting Orientation:			
End Connection:		Mounting Kit:			
End Connection Material:		Flange / Wafer Rating:	Note 2		
Lining Material:	Note 2	Flange Type:	Note 2		
Lining Protector:	Note 2	Flange Material:	Note 2		
Electrode Type:	Note 2	Allow. Operating Velocity:		to	
Electrode Material:	Note 2	Enclosure Class:	NEMA 4X		
Grounding Rings:		Element Model Number:	Note 2		

TRANSMITTER

Stainless Steel Tag:	FIT-F08323	Wetted O-Ring Material:			
Application:		Fill Fluid:			
Type:		Elevation:			
Enclosure Class:	NEMA 4X	Suppression:			
Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:		to	
Mounting:	Local	Calibration Range:		to	
Signal / Protocol:	Profibus PA (Note3)	Controller Display Range:		to	
Power Supply:	24 VDC	Static Pressure Range:		to	
Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:		to	
Accuracy:	0.25%	Allow. Oper Temperature:		to	
Response Time:		Maximum Static Pressure			
Element Material:		Manufacturer:	Siemens		
		Model:	Sitran F M Mag Series 6000		

OPTION

Integral Meter:		Hydrostatic Testing:			
Scale:		Mounting Brackets:			

NOTES

1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
2. Information to be provided by Vendor.
3. Complete with option Card Profibus PA Module





## Flowmeter Instrument

**Magnetic**

DATA SHEET NO. **DST-FIT-F87021** REV. **0**

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022 18 05	Issued for Construction	DG	JP		

**Project: 21-0107-015**

<b>TAG NO:</b>	<b>FIT-F87021</b>	Serial No:	Loop Wiring Diagrams:	1-0101-AIFS-F202-001		
		Spec No:	Line / Vessel Number:	80-FC-PV04-0748		
<b>Asset No:</b>		P&ID:	1-0101-PPID-F004-001	Line ID:	Size:	80mm Schedule:
<b>Description:</b>	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION			Manufacturer:	Siemens	
				Model:	Sitrans F M Mag 6000	
<b>Purchase Order:</b>		<b>Vendor:</b>	Trans-West			
<b>Requisition Number:</b>		<b>Job Number:</b>				

**PROCESS CONDITIONS**

Fluid:	Ferric Chloride				
Fluid State:	Liquid				
<b>Process Data Case (Flow):</b>	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
Flow:	3.0	5.4	7.0	L/s	
Pressure:	60	60	60	psig	
Temperature:	0	20	30	°C	
Design Pressure:	150	psig	Vapor Pressure Pv:	N/A	
Design Temperature:	-10 to 50	°C	Viscosity:	N/A	
Lower SG / Density:	1.39		Compressibility (Z):	N/A	
Higher SG / Density:	1.46		Special Condition:	N/A	
Pipe Material	PVC				

**METER**

Connection Size:		Mounting Orientation:			
End Connection:		Mounting Kit:			
End Connection Material:		Flange / Wafer Rating:	Note 2		
Lining Material:	Note 2	Flange Type:	Note 2		
Lining Protector:	Note 2	Flange Material:	Note 2		
Electrode Type:	Note 2	Allow. Operating Velocity:		to	
Electrode Material:	Note 2	Enclosure Class:	NEMA 4X		
Grounding Rings:		Element Model Number:	Note 2		

**TRANSMITTER**

Stainless Steel Tag:	FIT-F87021	Wetted O-Ring Material:			
Application:		Fill Fluid:			
Type:		Elevation:			
Enclosure Class:	NEMA 4X	Suppression:			
Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:		to	
Mounting:	Local	Calibration Range:		to	
Signal / Protocol:	Profibus PA (Note3)	Controller Display Range:		to	
Power Supply:	24 VDC	Static Pressure Range:		to	
Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:		to	
Accuracy:	0.25%	Allow. Oper Temperature:		to	
Response Time:		Maximum Static Pressure			
Element Material:		Manufacturer:	Siemens		
		Model:	Sitran F M Mag Series 6000		

**OPTION**

Integral Meter:		Hydrostatic Testing:			
Scale:		Mounting Brackets:			

**NOTES**

1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
2. Information to be provided by Vendor.
3. Complete with option Card Profibus PA Module



## Flowmeter Instrument

Magnetic

DATA SHEET NO.			REV.
<b>DST-FIT-F87031</b>			<b>0</b>
SHEET	1	OF	1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022 18 05	Issued for Construction	DG	JP		

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>FIT-F87031</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AIFS-F202-001		
Asset No:		Spec No:		Line / Vessel Number:	80-FC-PV04-0747		
Description:	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION			Manufacturer:	Siemens		
Purchase Order:		P&ID:	1-0101-PPID-F004-001	Model:	Sitrans F M Mag 6000		
Requisition Number:		Vendor:			Trans-West		
		Job Number:					

PROCESS CONDITIONS

Fluid:	Ferric Chloride				
Fluid State:	Liquid				
Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
Flow:	3.0	5.4	7.0	L/s	
Pressure:	60	60	60	psig	
Temperature:	0	20	30	°C	
Design Pressure:	150	psig	Vapor Pressure Pv:	N/A	
Design Temperature:	-10 to 50	°C	Viscosity:	N/A	
Lower SG / Density:	1.39		Compressibility (Z):	N/A	
Higher SG / Density:	1.46		Special Condition:	N/A	
Pipe Material	PVC				

METER

Connection Size:		Mounting Orientation:	
End Connection:		Mounting Kit:	
End Connection Material:		Flange / Wafer Rating:	Note 2
Lining Material:	Note 2	Flange Type:	Note 2
Lining Protector:	Note 2	Flange Material:	Note 2
Electrode Type:	Note 2	Allow. Operating Velocity:	
Electrode Material:	Note 2	Enclosure Class:	NEMA 4X
Grounding Rings:		Element Model Number:	Note 2

TRANSMITTER

Stainless Steel Tag:	FIT-F87031	Wetted O-Ring Material:	
Application:		Fill Fluid:	
Type:		Elevation:	
Enclosure Class:	NEMA 4X	Suppression:	
Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:	
Mounting:	Local	Calibration Range:	
Signal / Protocol:	Profibus PA (Note3)	Controller Display Range:	
Power Supply:	24 VDC	Static Pressure Range:	
Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:	
Accuracy:	0.25%	Allow. Oper Temperature:	
Response Time:		Maximum Static Pressure	
Element Material:		Manufacturer:	Siemens
		Model:	Sitran F M Mag Series 6000

OPTION

Integral Meter:		Hydrostatic Testing:	
Scale:		Mounting Brackets:	

NOTES

1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
2. Information to be provided by Vendor.
3. Complete with option Card Profibus PA Module



## Flowmeter Instrument

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0	2022-07-13	Issued for Addendum	NP
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**Project:** 21-0107-015

<b>TAG NO:</b>	FIT-G07513	Serial No:			Loop Wiring Diagrams:	1-0101-AILD-G211-001	
		Spec No:			Line / Vessel Number:	15-FC-PV04-00753	
Asset No:		P&ID:	1-0101-PPID-G012-001		Line ID:		Size: 15mm
Description:	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION				Manufacturer:	Siemens	
					Model:	Sitrans F M Mag 6000 & F M Mag 1100	
Purchase Order:			Vendor:	Trans-West			
Requisition Number:			Job Number:				

PROCESS CONDITIONS	Fluid:	Ferric Chloride				
	Fluid State:	Liquid				
	Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
	Flow:	-	200	271	L/hr	
	Pressure:	-	80	80	psig	
	Temperature:	15	20	30	°C	
	Design Pressure:	80	psig	Vapor Pressure Pv:	N/A	
	Design Temperature:	15 to 30	°C	Viscosity:	N/A	
	Lower SG / Density:	N/A		Compressibility (Z):	N/A	
	Higher SG / Density:	1.53		Special Condition:	N/A	
	Pipe Material	PVC				

METER	Connection Size:		Mounting Orientation:	
	End Connection:		Mounting Kit:	
	End Connection Material:		Flange / Wafer Rating:	Note 2
	Lining Material:	Note 2	Flange Type:	Note 2
	Lining Protector:	Note 2	Flange Material:	Note 2
	Electrode Type:	Note 2	Allow. Operating Velocity:	
	Electrode Material:	Note 2	Enclosure Class:	NEMA 4X
	Grounding Rings:		Element Model Number:	Note 2

TRANSMITTER	Stainless Steel Tag:	FIT-Y07913	Wetted O-Ring Material:	
	Application:		Fill Fluid:	
	Type:		Elevation:	
	Enclosure Class:	NEMA 4X	Suppression:	
	Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:	
	Mounting:	Local	Calibration Range:	
	Signal / Protocol:	4-20 mA / HART	Controller Display Range:	
	Power Supply:	24 VDC	Static Pressure Range:	
	Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:	
	Accuracy:	0.25%	Allow. Oper Temperature:	
	Response Time:		Maximum Static Pressure:	
	Element Material:		Manufacturer:	Siemens
			Model:	Sitrans F M Mag Series 6000

OPTION	Integral Meter:		Hydrostatic Testing:	
	Scale:		Mounting Brackets:	

NOTES	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
	2. Information to be provided by Vendor.



## Flowmeter Instrument

**Magnetic**

DATA SHEET NO.			REV.
<b>DST-FIT-W08801</b>			<b>0</b>
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**Project: 21-0107-015**

<b>TAG NO:</b>	<b>FIT-W08801</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AIFS-F202-001		
Asset No:		Spec No:		Line / Vessel Number:	80-SHD-PV04-0800		
Description:	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION			Manufacturer:	Siemens		
Purchase Order:		P&ID:	1-0101-PPID-F005-001	Model:	Sitrans F M Mag 6000		
Requisition Number:		Vendor:			Trans-West		
		Job Number:					

**PROCESS CONDITIONS**

Fluid:	Sodium Hydroxide				
Fluid State:	Liquid				
Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
Flow:	3.0	5.4	7.0	L/s	
Pressure:	60	60	60	psig	
Temperature:	15	20	30	°C	
Design Pressure:	150	psig	Vapor Pressure Pv:	N/A	
Design Temperature:	10 to 50	°C	Viscosity:	36	cP
Lower SG / Density:	N/A		Compressibility (Z):	N/A	
Higher SG / Density:	1.53		Special Condition:	N/A	
Pipe Material	PVC				

**METER**

Connection Size:		Mounting Orientation:	
End Connection:		Mounting Kit:	
End Connection Material:		Flange / Wafer Rating:	Note 2
Lining Material:	Note 2	Flange Type:	Note 2
Lining Protector:	Note 2	Flange Material:	Note 2
Electrode Type:	Note 2	Allow. Operating Velocity:	
Electrode Material:	Note 2	Enclosure Class:	NEMA 4X
Grounding Rings:		Element Model Number:	Note 2

**TRANSMITTER**

Stainless Steel Tag:	FIT-W08801	Wetted O-Ring Material:	
Application:		Fill Fluid:	
Type:		Elevation:	
Enclosure Class:	NEMA 4X	Suppression:	
Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:	
Mounting:	Local	Calibration Range:	
Signal / Protocol:	Profibus PA (Note3)	Controller Display Range:	
Power Supply:	24 VDC	Static Pressure Range:	
Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:	
Accuracy:	0.25%	Allow. Oper Temperature:	
Response Time:		Maximum Static Pressure	
Element Material:		Manufacturer:	Siemens
		Model:	Sitran F M Mag Series 6000

**OPTION**

Integral Meter:		Hydrostatic Testing:	
Scale:		Mounting Brackets:	

**NOTES**

1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
2. Information to be provided by Vendor.
3. Complete with option Card Profibus PA Module



## Flowmeter Instrument

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**Project:** 21-0107-015

<b>TAG NO:</b>	FIT-Y07913	Serial No:			Loop Wiring Diagrams:	1-0101-AILD-Y212-001	
		Spec No:			Line / Vessel Number:	15-FC-PV04-0777	
Asset No:		P&ID:	1-0101-PPID-Y001-001		Line ID:		Size: 15mm
Description:	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION				Manufacturer:	Siemens	
					Model:	Sitrans F M Mag 6000 & F M Mag 1100	
Purchase Order:			Vendor:	Trans-West			
Requisition Number:			Job Number:				


Fluid:	Ferric Chloride				
Fluid State:	Liquid				
PROCESS CONDITIONS	Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
	Flow:	-	30	30	L/hr
	Pressure:	-	80	80	psig
	Temperature:	15	20	30	°C
	Design Pressure:	80	psig	Vapor Pressure Pv:	N/A
	Design Temperature:	15 to 30	°C	Viscosity:	N/A
	Lower SG / Density:	N/A		Compressibility (Z):	N/A
	Higher SG / Density:	1.53		Special Condition:	N/A
	Pipe Material	PVC			

METER	Connection Size:		Mounting Orientation:	
	End Connection:		Mounting Kit:	
	End Connection Material:		Flange / Wafer Rating:	Note 2
	Lining Material:	Note 2	Flange Type:	Note 2
	Lining Protector:	Note 2	Flange Material:	Note 2
	Electrode Type:	Note 2	Allow. Operating Velocity:	
	Electrode Material:	Note 2	Enclosure Class:	NEMA 4X
	Grounding Rings:		Element Model Number:	Note 2

TRANSMITTER	Stainless Steel Tag:	FIT-Y07913	Wetted O-Ring Material:	
	Application:		Fill Fluid:	
	Type:		Elevation:	
	Enclosure Class:	NEMA 4X	Suppression:	
	Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:	
	Mounting:	Local	Calibration Range:	
	Signal / Protocol:	4-20 mA / HART	Controller Display Range:	
	Power Supply:	24 VDC	Static Pressure Range:	
	Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:	
	Accuracy:	0.25%	Allow. Oper Temperature:	
	Response Time:		Maximum Static Pressure:	
	Element Material:		Manufacturer:	Siemens
			Model:	Sitrans F M Mag Series 6000

OPTION	Integral Meter:		Hydrostatic Testing:	
	Scale:		Mounting Brackets:	

NOTES	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
	2. Information to be provided by Vendor.

		<b>Flowmeter Instrument</b> <b>Magnetic</b>				DATA SHEET NO.		REV.
						DST-FIT-Y07923		0
		NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
		0	2022-07-13	Issued for Addendum	NP	AF	<i>JMS</i>	<i>JMS</i>
<b>Project:</b>	<b>21-0107-015</b>							
<b>TAG NO:</b>	<b>FIT-Y07923</b>		Serial No:	Loop Wiring Diagrams:		1-0101-AILD-Y213-001		
			Spec No:	Line / Vessel Number:		15-FC-PV04-0778		
<b>Asset No:</b>			P&ID:	1-0101-PPID-Y001-001		Line ID:		
						Size:	15mm	
<b>Description:</b>	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION		Manufacturer:	Siemens				
			Model:	Sitrans F M Mag 6000 & F M Mag 1100				
<b>Purchase Order:</b>			Vendor:	Trans-West				
<b>Requisition Number:</b>			Job Number:					
PROCESS CONDITIONS	Fluid:	Ferric Chloride						
	Fluid State:	Liquid						
	Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:			
	Flow:	-	30	30	L/hr			
	Pressure:	-	80	80	psig			
	Temperature:	15	20	30	°C			
	Design Pressure:	80	psig	Vapor Pressure Pv:	N/A			
	Design Temperature:	15 to 30	°C	Viscosity:	N/A			
	Lower SG / Density:	N/A		Compressibility (Z):	N/A			
	Higher SG / Density:	1.53		Special Condition:	N/A			
Pipe Material	PVC							
METER	Connection Size:			Mounting Orientation:				
	End Connection:			Mounting Kit:				
	End Connection Material:			Flange / Wafer Rating:	Note 2			
	Lining Material:	Note 2		Flange Type:	Note 2			
	Lining Protector:	Note 2		Flange Material:	Note 2			
	Electrode Type:	Note 2		Allow. Operating Velocity:		to		
	Electrode Material:	Note 2		Enclosure Class:	NEMA 4X			
	Grounding Rings:			Element Model Number:	Note 2			
TRANSMITTER	Stainless Steel Tag:	FIT-Y07923		Wetted O-Ring Material:				
	Application:			Fill Fluid:				
	Type:			Elevation:				
	Enclosure Class:	NEMA 4X		Suppression:				
	Housing:	Fiberglass-Reinforced Polyimide		Instrument Range:		to		
	Mounting:	Local		Calibration Range:		to		
	Signal / Protocol:	4-20 mA / HART		Controller Display Range:		to		
	Power Supply:	24 VDC		Static Pressure Range:		to		
	Electrical Connection:	4x1/2" NPT		Allow. Oper Pressure:		to		
	Accuracy:	0.25%		Allow. Oper Temperature:		to		
	Response Time:			Maximum Static Pressure				
	Element Material:			Manufacturer:	Siemens			
				Model:	Sitrans F M Mag Series 6000			
OPTION	Integral Meter:			Hydrostatic Testing:				
	Scale:			Mounting Brackets:				
NOTES	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.							
	2. Information to be provided by Vendor.							



## Flowmeter Instrument

DATA SHEET NO.			REV.
<b>DST-FIT-Y07933</b>			<b>0</b>
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**Project:** 21-0107-015

<b>TAG NO:</b>	FIT-Y07933	Serial No:			Loop Wiring Diagrams:	1-0101-AILD-Y214-001	
		Spec No:			Line / Vessel Number:	15-FC-PV04-0779	
Asset No:		P&ID:	1-0101-PPID-Y001-001		Line ID:		Size: 15mm
Description:	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION				Manufacturer:	Siemens	
					Model:	Sitrans F M Mag 6000 & F M Mag 1100	
Purchase Order:			Vendor:	Trans-West			
Requisition Number:			Job Number:				


Fluid:	Ferric Chloride				
Fluid State:	Liquid				
PROCESS CONDITIONS	Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
	Flow:		30	30	L/hr
	Pressure:	-	80	80	psig
	Temperature:	15	20	30	°C
	Design Pressure:	80	psig	Vapor Pressure Pv:	N/A
	Design Temperature:	15 to 30	°C	Viscosity:	N/A
	Lower SG / Density:	N/A		Compressibility (Z):	N/A
	Higher SG / Density:	1.53		Special Condition:	N/A
	Pipe Material	PVC			

METER	Connection Size:		Mounting Orientation:	
	End Connection:		Mounting Kit:	
	End Connection Material:		Flange / Wafer Rating:	Note 2
	Lining Material:	Note 2	Flange Type:	Note 2
	Lining Protector:	Note 2	Flange Material:	Note 2
	Electrode Type:	Note 2	Allow. Operating Velocity:	
	Electrode Material:	Note 2	Enclosure Class:	NEMA 4X
	Grounding Rings:		Element Model Number:	Note 2

TRANSMITTER	Stainless Steel Tag:	FIT-Y07933	Wetted O-Ring Material:	
	Application:		Fill Fluid:	
	Type:		Elevation:	
	Enclosure Class:	NEMA 4X	Suppression:	
	Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:	
	Mounting:	Local	Calibration Range:	
	Signal / Protocol:	4-20 mA / HART	Controller Display Range:	
	Power Supply:	24 VDC	Static Pressure Range:	
	Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:	
	Accuracy:	0.25%	Allow. Oper Temperature:	
	Response Time:		Maximum Static Pressure:	
	Element Material:		Manufacturer:	Siemens
			Model:	Sitrans F M Mag Series 6000

OPTION	Integral Meter:		Hydrostatic Testing:	
	Scale:		Mounting Brackets:	

NOTES	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
	2. Information to be provided by Vendor.

	<b>Level Element</b> Ultrasonic Level Meter			DATA SHEET NO.		REV.	
				DST-LIT-F07301		0	
	NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
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<b>Project:</b>	<b>21-0107-015</b>
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<b>TAG NO:</b>	<b>LIT-F07301</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AIFS-F202-001
Asset No:		Spec No:		Line / Vessel Number:	TK-F0730
Description:	ULTRASONIC LEVEL TRANSMITTER			Manufacturer:	Siemens
Purchase Order:		P&ID:	1-0101-PPID-F004-001	Model:	Sitran Probe LU
Requisition Number:		Vendor:			Trans-West
		Job Number:			

Fluid:	Ferric Chloride
Fluid State:	Liquid


PROCESS CONDITIONS		Min:	Normal (Operating):	Max (Full Scale):	Units
	Flow:				
	Pressure:	60	60	60	psig
	Temperature	0	20	30	°C
	Design Pressure:	150	psig	Tank Top Style:	Flat
	Design Temperature:	-10 to 50	°C	Tank Bottom Style:	Flat
	Vessel Height:	10.6 meters		Width / Diameter:	4.3 meters
	Fluid Dielectric Constant:	N/A		Higher Viscosity:	N/A
	Level Empty:	0 meters		Ambient Temperature:	20 °C
	Level Full:	10.6 meters		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A				

TRANSDUCER	Transducer Type:	Ultrasonic	Rated Temperature:	
	Measurement Type:		Rated Pressure:	
	Body Material:	Note 2	Signal Type:	
	Flange Material:	Note 2	Frequency:	
	Element Material:	Note 2	Cable Length:	
	Vessel I.D.:		Conduit Connection:	
	Measurement Range:	0 - 10.5 meters	NDE Test Category:	
	Mounting Position:	Vertical	Ambient Temperature:	
	Process Connection:	50MM (2") NPT	Manufacturer:	Siemens
	Connection Material:	Fibre Glass	Model:	Sitrans Probe LU

TRANSMITTER	Function:	Transmitter	Approval(s):	CSA
	Mounting:	Local (Note 2)	Mounting Kit:	Flange adapter for mating 80mm ANSI flange
	Enclosure Class:	NEMA 4X	Cable Entries:	2 x 1/2" NPT
	Display:	LCD Display	Power Wiring:	Profibus PA
	Case Material:	To be filled-out by Vendor	Volume Calculation:	Yes
	Output:	ProfibusPA	SS Tag:	
	Communication Protocol:	ProfibusPA	Accuracy:	0.15%
	Range:			

NOTES	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
	2. Information to be provided by Vendor.



	<b>Level Element</b> Ultrasonic Level Meter			DATA SHEET NO.		REV.	
				DST-LIT-F07401		0	
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<b>Project:</b>	<b>21-0107-015</b>
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<b>TAG NO:</b>	<b>LIT-F07401</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AIFS-F202-001		
Asset No:		Spec No:		Line / Vessel Number:	TK-F0740		
Description:	ULTRASONIC LEVEL TRANSMITTER			Manufacturer:	Siemens		
Purchase Order:		P&ID:	1-0101-PPID-F004-001	Model:	Sitran Probe LU		
Requisition Number:		Vendor:			Trans-West		
		Job Number:					

Fluid:	Ferric Chloride		
Fluid State:	Liquid		

PROCESS CONDITIONS		Min:	Normal (Operating):	Max (Full Scale):	Units
	Flow:				
	Pressure:	60	60	60	psig
	Temperature	0	20	30	°C
	Design Pressure:	150	psig	Tank Top Style:	Flat
	Design Temperature:	-10 to 50	°C	Tank Bottom Style:	Flat
	Vessel Height:	10.6 meters		Width / Diameter:	4.3 meters
	Fluid Dielectric Constant:	N/A		Higher Viscosity:	N/A
	Level Empty:	0 meters		Ambient Temperature:	20 °C
	Level Full:	10.6 meters		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A				

TRANSDUCER	Transducer Type:	Ultrasonic		Rated Temperature:	
	Measurement Type:			Rated Pressure:	
	Body Material:	Note 2		Signal Type:	
	Flange Material:	Note 2		Frequency:	
	Element Material:	Note 2		Cable Length:	
	Vessel I.D.:			Conduit Connection:	
	Measurement Range:	0 - 10.5 meters		NDE Test Category:	
	Mounting Position:	Vertical		Ambient Temperature:	
	Process Connection:	50MM (2") NPT		Manufacturer:	Siemens
	Connection Material:	Fibre Glass		Model:	Sitrans Probe LU

TRANSMITTER	Function:	Transmitter		Approval(s):	CSA
	Mounting:	Local (Note 2)		Mounting Kit:	Flange adapter for mating 80mm ANSI flange
	Enclosure Class:	NEMA 4X		Cable Entries:	2 x 1/2" NPT
	Display:	LCD Display		Power Wiring:	Profibus PA
	Case Material:	To be filled-out by Vendor		Volume Calculation:	Yes
	Output:	ProfibusPA		SS Tag:	
	Communication Protocol:	ProfibusPA		Accuracy:	0.15%
	Range:				

NOTES	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
	2. Information to be provided by Vendor.



**Level Element**  
**Ultrasonic Level Meter**

DATA SHEET NO.  
**DST-LIT-G07502**

REV.  
**0**

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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
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**Project:** 21-0107-015

**TAG NO:** LIT-G07502      Serial No: \_\_\_\_\_      Loop Wiring Diagrams: 1-0101-AILD-G206-001  
Spec No: \_\_\_\_\_      Line / Vessel Number: TK-G0750

**Asset No:** \_\_\_\_\_      P&ID: 1-0101-PPID-G012-001      Line ID: \_\_\_\_\_      Size: \_\_\_\_\_      Schedule: \_\_\_\_\_

**Description:** ULTRASONIC LEVEL TRANSMITTER      Manufacturer: Siemens

**Purchase Order:** \_\_\_\_\_      Vendor: Trans-West

**Requisition Number:** \_\_\_\_\_      Job Number: \_\_\_\_\_

**Fluid:** Ferric Chloride  
**Fluid State:** Liquid


	Min:	Normal (Operating):	Max (Full Scale):	Units
Flow:	-	-	-	
Pressure:	0	0	0	psig
Temperature:	5	20	35	°C

Design Pressure:	0	psig	Tank Top Style:	Flat
Design Temperature:	5 to 35	°C	Tank Bottom Style:	Flat
Vessel Height:	1.5748 m		Width / Diameter:	0.8636 m
Fluid Dielectric Constant:	N/A		Higher Viscosity:	N/A
Level Empty:	0 meters		Ambient Temperature:	20 °C
Level Full:	1.024 meters		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

Transducer Type:	Ultrasonic	Rated Temperature:	
Measurement Type:		Rated Pressure:	
Body Material:	Note 2	Signal Type:	
Flange Material:	Note 2	Frequency:	
Element Material:	Note 2	Cable Length:	
Vessel I.D.:		Conduit Connection:	
Measurement Range:	0 - 1.2 meters	NDE Test Category:	
Mounting Position:	Vertical	Ambient Temperature:	
Process Connection:	50MM (2") NPT	Manufacturer:	Siemens
Connection Material:	Fibre Glass	Model:	Sitrans Probe LU

Function:	Transmitter	Approval(s):	CSA
Mounting:	Local (Note 2)	Mounting Kit:	Flange adapter for mating 80mm ANSI flange
Enclosure Class:	NEMA 4X	Cable Entries:	2 x 1/2" NPT
Display:	LCD Display	Power Wiring:	loop Powered
Case Material:		Volume Calculation:	Yes
Output:	4-20mA	SS Tag:	
Communication Protocol:		Accuracy:	0.15%
Range:			

- NOTES**
1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
  2. Information to be provided by Vendor.

	<b>Level Element</b>			DATA SHEET NO.		REV.	
	<b>Ultrasonic Level Meter</b>			DST-LIT-W08101		0	
	NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
	0	2022 18 05	Issued for Construction	DG	JP		

<b>Project:</b>	<b>21-0107-015</b>
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<b>TAG NO:</b>	<b>LIT-W08101</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AIFS-F204-001
Asset No:		Spec No:		Line / Vessel Number:	TK-F0810
Description:	ULTRASONIC LEVEL TRANSMITTER			Manufacturer:	Siemens
Purchase Order:		P&ID:	1-0101-PPID-F005-001	Model:	Sitran Probe LU
Requisition Number:		Vendor:			Trans-West
		Job Number:			


Fluid:	Sodium Hydroxide
Fluid State:	Liquid

<b>PROCESS CONDITIONS</b>		Min:	Normal (Operating):	Max (Full Scale):	Units	
	Flow:					
	Pressure:	60	60	60	psig	
	Temperature	15	20	30	°C	
	Design Pressure:	150	psig	Tank Top Style:	Flat	
	Design Temperature:	10 to 50	°C	Tank Bottom Style:	Flat	
	Vessel Height:	4.8 meters		Width / Diameter:	3.7 meters	
	Fluid Dielectric Constant:	N/A		Higher Viscosity:	1.53	cP
	Level Empty:	0 meters		Ambient Temperature:	20	°C
	Level Full:	4.8 meters		Area Classification:	Non Hazardous, Corrosive	
Special Condition:	N/A					

<b>TRANSDUCER</b>	Transducer Type:	Ultrasonic	Rated Temperature:	
	Measurement Type:		Rated Pressure:	
	Body Material:	Note 2	Signal Type:	
	Flange Material:	Note 2	Frequency:	
	Element Material:	Note 2	Cable Length:	
	Vessel I.D.:		Conduit Connection:	
	Measurement Range:	0 - 4.8 meters	NDE Test Category:	
	Mounting Position:	Vertical	Ambient Temperature:	
	Processs Connection:	50MM (2") NPT	Manufacturer:	Siemens
	Connection Material:	Fibre Glass	Model:	Sitrans Probe LU

<b>TRANSMITTER</b>	Function:	Transmitter	Approval(s):	CSA
	Mounting:	Local (Note 2)	Mounting Kit:	Flange adapter for mating 80mm ANSI flange
	Enclosure Class:	NEMA 4X	Cable Entries:	2 x 1/2" NPT
	Display:	LCD Display	Power Wiring:	Profibus PA
	Case Material:	To be filled-out by Vendor	Volume Calculation:	Yes
	Output:	ProfibusPA	SS Tag:	
	Communication Protocol:	ProfibusPA	Accuracy:	0.15%
	Range:			

<b>NOTES</b>	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
	2. Information to be provided by Vendor.

	<b>Level Element</b>			DATA SHEET NO.		REV.	
	<b>Ultrasonic Level Meter</b>			DST-LIT-W08201		0	
	NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
	0	2022 18 05	Issued for Construction	DG	JP		

<b>Project:</b>	<b>21-0107-015</b>
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<b>TAG NO:</b>	<b>LIT-W08201</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AIFS-F204-001
Asset No:		Spec No:		Line / Vessel Number:	TK-F0820
Description:	ULTRASONIC LEVEL TRANSMITTER			Manufacturer:	Siemens
Purchase Order:		P&ID:	1-0101-PPID-F005-001	Model:	Sitran Probe LU
Requisition Number:		Vendor:			Trans-West
		Job Number:			

Fluid:	Sodium Hydroxide
Fluid State:	Liquid

<b>PROCESS CONDITIONS</b>		Normal (Operating):	Max (Full Scale):	Units		
	Flow:	3.0				
	Pressure:	60	60	60	psig	
	Temperature	15	20	30	°C	
	Design Pressure:	150	psig	Tank Top Style:	Flat	
	Design Temperature:	10 to 50	°C	Tank Bottom Style:	Flat	
	Vessel Height:	4.8 meters		Width / Diameter:	3.7 meters	
	Fluid Dielectric Constant:	N/A		Higher Viscosity:	1.53	cP
	Level Empty:	0 meters		Ambient Temperature:	20	°C
	Level Full:	4.8 meters		Area Classification:	Non Hazardous, Corrosive	
Special Condition:	N/A					

<b>TRANSDUCER</b>	Transducer Type:	Ultrasonic	Rated Temperature:	
	Measurement Type:		Rated Pressure:	
	Body Material:	Note 2	Signal Type:	
	Flange Material:	Note 2	Frequency:	
	Element Material:	Note 2	Cable Length:	
	Vessel I.D.:		Conduit Connection:	
	Measurement Range:	0 - 4.8 meters	NDE Test Category:	
	Mounting Position:	Vertical	Ambient Temperature:	
	Processs Connection:	50MM (2") NPT	Manufacturer:	Siemens
	Connection Material:	Fibre Glass	Model:	Sitrans Probe LU

<b>TRANSMITTER</b>	Function:	Transmitter	Approval(s):	CSA
	Mounting:	Local (Note 2)	Mounting Kit:	Flange adapter for mating 80mm ANSI flange
	Enclosure Class:	NEMA 4X	Cable Entries:	2 x 1/2" NPT
	Display:	LCD Display	Power Wiring:	Profibus PA
	Case Material:	To be filled-out by Vendor	Volume Calculation:	Yes
	Output:	ProfibusPA	SS Tag:	
	Communication Protocol:	ProfibusPA	Accuracy:	0.15%
	Range:			

<b>NOTES</b>	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
	2. Information to be provided by Vendor.



**Level Element**  
**Ultrasonic Level Meter**

DATA SHEET NO.  
**DST-LIT-Y07902**

REV.  
**0**

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-07-13	Issued for Addendum	NP	AF	<i>[Signature]</i>	<i>[Signature]</i>

**Project:** 21-0107-015

**TAG NO:** LIT-Y07902      Serial No:      Loop Wiring Diagrams: 1-0101-AILD-Y205-001

Asset No:      Spec No:      Line / Vessel Number: TK-Y0790

Description: ULTRASONIC LEVEL TRANSMITTER      P&ID: 1-0101-PPID-Y001-001      Line ID:      Size:      Schedule:      Manufacturer: Siemens

Purchase Order:      Vendor:      Model:      Sitran Probe LU

Requisition Number:      Job Number:      Trans-West

Fluid: Ferric Chloride  
Fluid State: Liquid

	Min:	Normal (Operating):	Max (Full Scale):	Units
Flow:	-	-	-	
Pressure:	0	0	0	psig
Temperature:	5	20	35	°C

Design Pressure:	0	psig	Tank Top Style:	Flat
Design Temperature:	5 to 35	°C	Tank Bottom Style:	Flat
Vessel Height:	1.5748		Width / Diameter:	0.8636
Fluid Dielectric Constant:	N/A		Higher Viscosity:	N/A
Level Empty:	0 meters		Ambient Temperature:	20 °C
Level Full:	1.024 meters		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

Transducer Type:	Ultrasonic	Rated Temperature:	
Measurement Type:		Rated Pressure:	
Body Material:	Note 2	Signal Type:	
Flange Material:	Note 2	Frequency:	
Element Material:	Note 2	Cable Length:	
Vessel I.D.:		Conduit Connection:	
Measurement Range:	0 - 1.2 meters	NDE Test Category:	
Mounting Position:	Vertical	Ambient Temperature:	
Process Connection:	50MM (2") NPT	Manufacturer:	Siemens
Connection Material:	Fibre Glass	Model:	Sitrans Probe LU

Function:	Transmitter	Approval(s):	CSA
Mounting:	Local (Note 2)	Mounting Kit:	Flange adapter for mating 80mm ANSi flange
Enclosure Class:	NEMA 4X	Cable Entries:	2 x 1/2" NPT
Display:	LCD Display	Power Wiring:	loop Powered
Case Material:		Volume Calculation:	Yes
Output:	4-20mA	SS Tag:	
Communication Protocol:		Accuracy:	0.15%
Range:			

- NOTES**
1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
  2. Information to be provided by Vendor.



**Level Element**  
**Hydrostatic Level Meter**

DATA SHEET NO.  
**DST-LIT-F07302**

REV.  
**0**

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-07-13	Issued for Addendum	NP	AF	<i>[Signature]</i>	<i>[Signature]</i>

**Project:** 21-0107-015

<b>TAG NO:</b> LIT-F07302	Serial No:	Loop Wiring Diagrams:	1-0101-AILD-F227-001
	Spec No:	Line / Vessel Number:	TK-F0730

Asset No:	P&ID:	1-0101-PPID-F004-001	Line ID:	Size:	Schedule:
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Description:	HYDROSTATIC LEVEL TRANSMITTER	Manufacturer:	Endress+Hauser
		Model:	Waterpilot FMX21

Purchase Order:	Vendor:	Synergy
Requisition Number:	Job Number:	

Fluid:	Ferric Chloride
Fluid State:	Liquid

	Min:	Normal (Operating):	Max (Full Scale):	Units
Flow:	-	-	-	
Pressure:	0	21	21	psig
Temperature:	0	20	40	°C

Design Pressure:	21	psig	Tank Top Style:	Flat
Design Temperature:	0 to 40	°C	Tank Bottom Style:	Flat
Vessel Height:	10.85 m		Width / Diameter:	4.267 m
Fluid Dielectric Constant:	N/A		Higher Viscosity:	N/A
Level Empty:	0 meters		Ambient Temperature:	20 °C
Level Full:	10.112 meters		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

Transducer Type:	Hydrostatic	Rated Temperature:	50 °C
Measurement Type:	Level probe corrosion resistant with heat-shrink sleeve	Rated Pressure:	
Body Material:		Signal Type:	4-20mA
Flange Material:		Frequency:	
Element Material:	1.4435 coated with PPS/Polyolefin	Cable Length:	30 meters
Vessel I.D.:		Conduit Connection:	Note 1
Measurement Range:	0 - 10.5 meters	NDE Test Category:	
Mounting Position:	Vertical	Ambient Temperature:	
Process Connection:	3" Flange 150#	Manufacturer:	Endress+Hauser
Connection Material:		Model:	FMX21-CD251KGD15A PRPSZ1

Function:	Transmitter	Approval(s):	CSA
Mounting:		Mounting Kit:	Note 1
Enclosure Class:	NEMA 4X	Cable Entries:	
Display:	None	Power Wiring:	2 wire loop powered
Case Material:		Volume Calculation:	
Output:	4-20mA	SS Tag:	
Communication Protocol:		Accuracy:	0.20%
Range:	0 - 200 kPa		

**NOTES**

- Cable-mounting-Screw NPT1-1/2, IP66/67 terminal box.



**Level Element**  
**Hydrostatic Level Meter**

DATA SHEET NO.  
**DST-LIT-F07402**

REV.  
**0**

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-07-13	Issued for Addendum	NP	AF	<i>[Signature]</i>	<i>[Signature]</i>

**Project:** 21-0107-015

**TAG NO:** LIT-F07402      Serial No:      Loop Wiring Diagrams: 1-0101-AILD-F228-001

Asset No:      Spec No:      Line / Vessel Number: TK-F0740

P&ID: 1-0101-PPID-F004-001      Line ID:      Size:      Schedule:

Description: HYDROSTATIC LEVEL TRANSMITTER      Manufacturer: Endress+Hauser

Purchase Order:      Vendor: Synergy

Requisition Number:      Job Number:

Fluid: Ferric Chloride  
Fluid State: Liquid

	Min:	Normal (Operating):	Max (Full Scale):	Units
Flow:				
Pressure:	-	21	21	psig
Temperature:	0	20	40	°C

Design Pressure:	21	psig	Tank Top Style:	Flat
Design Temperature:	0 to 40	°C	Tank Bottom Style:	Flat
Vessel Height:	10.85 m		Width / Diameter:	4.267 m
Fluid Dielectric Constant:	N/A		Higher Viscosity:	N/A
Level Empty:	0 meters		Ambient Temperature:	20 °C
Level Full:	10.112 meters		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

Transducer Type:		Rated Temperature:	50 °C
Measurement Type:	Hydrostatic	Rated Pressure:	
Body Material:	Level probe corrosion resistant with heat-shrink sleeve	Signal Type:	4-20mA
Flange Material:		Frequency:	
Element Material:	1.4435 coated with PPS/Polyolefin	Cable Length:	30 meters
Vessel I.D.:		Conduit Connection:	Note 1
Measurement Range:	0 - 10.5 meters	NDE Test Category:	
Mounting Position:	Vertical	Ambient Temperature:	
Process Connection:	3" Flange 150#	Manufacturer:	Endress+Hauser
Connection Material:		Model:	FMX21-CD251KGD15A PRPSZ1

Function:	Transmitter	Approval(s):	CSA
Mounting:		Mounting Kit:	Note 1
Enclosure Class:	NEMA 4X	Cable Entries:	
Display:	None	Power Wiring:	2 wire loop powered
Case Material:		Volume Calculation:	
Output:	4-20mA	SS Tag:	
Communication Protocol:		Accuracy:	0.20%
Range:	0 - 200 kPa		

**NOTES**

- Cable-mounting-Screw NPT1-1/2, IP66/67 terminal box.



**Level Element**  
**Hydrostatic Level Meter**

DATA SHEET NO.  
**DST-LIT-F08102**

REV.  
**0**

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-07-13	Issued for Addendum	NP	AF	<i>[Signature]</i>	<i>[Signature]</i>

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>LIT-F08102</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F250-001
		Spec No:		Line / Vessel Number:	TK-F0810
<b>Asset No:</b>		P&ID:	1-0101-PPID-F005-001	Line ID:	
				Size:	
<b>Description:</b>	HYDROSTATIC LEVEL TRANSMITTER			Manufacturer:	Endress+Hauser
				Model:	Waterpilot FMX21
<b>Purchase Order:</b>		<b>Vendor:</b>			Synergy
<b>Requisition Number:</b>		<b>Job Number:</b>			

<b>Fluid:</b>	Sodium Hydroxide			
<b>Fluid State:</b>	Liquid			
	<b>Min:</b>	<b>Normal (Operating):</b>	<b>Max (Full Scale):</b>	<b>Units</b>
<b>Flow:</b>	-	-	-	
<b>Pressure:</b>	-	9	9	psig
<b>Temperature:</b>	0	20	40	°C
<b>Design Pressure:</b>	9	psig	<b>Tank Top Style:</b>	Flat
<b>Design Temperature:</b>	0 to 40	°C	<b>Tank Bottom Style:</b>	Flat
<b>Vessel Height:</b>	4.8 m		<b>Width / Diameter:</b>	3.6 m
<b>Fluid Dielectric Constant:</b>	N/A		<b>Higher Viscosity:</b>	N/A
<b>Level Empty:</b>	0 meters		<b>Ambient Temperature:</b>	20 °C
<b>Level Full:</b>	4.063 meters		<b>Area Classification:</b>	Non Hazardous, Corrosive
<b>Special Condition:</b>	N/A			

<b>Transducer Type:</b>		<b>Rated Temperature:</b>	50 °C
<b>Measurement Type:</b>	Hydrostatic	<b>Rated Pressure:</b>	
<b>Body Material:</b>	Level probe corrosion resistant with heat-shrink sleeve	<b>Signal Type:</b>	4-20mA
<b>Flange Material:</b>		<b>Frequency:</b>	
<b>Element Material:</b>	1.4435 coated with PPS/Polyolefin	<b>Cable Length:</b>	30 meters
<b>Vessel I.D.:</b>		<b>Conduit Connection:</b>	Note 1
<b>Measurement Range:</b>	0 - 4.8 meters	<b>NDE Test Category:</b>	
<b>Mounting Position:</b>	Vertical	<b>Ambient Temperature:</b>	
<b>Process Connection:</b>	3" Flange 150#	<b>Manufacturer:</b>	Endress+Hauser
<b>Connection Material:</b>		<b>Model:</b>	FMX21-CD251KGD15A PRPSZ1

<b>Function:</b>	Transmitter	<b>Approval(s):</b>	CSA
<b>Mounting:</b>		<b>Mounting Kit:</b>	Note 1
<b>Enclosure Class:</b>	NEMA 4X	<b>Cable Entries:</b>	
<b>Display:</b>	None	<b>Power Wiring:</b>	2 wire loop powered
<b>Case Material:</b>		<b>Volume Calculation:</b>	
<b>Output:</b>	4-20mA	<b>SS Tag:</b>	
<b>Communication Protocol:</b>		<b>Accuracy:</b>	0.20%
<b>Range:</b>	0 - 200 kPa		

**NOTES**

- Cable-mounting-Screw NPT1-1/2, IP66/67 terminal box.





**Level Element**  
**Hydrostatic Level Meter**

DATA SHEET NO.  
**DST-LIT-F08202**

REV.  
**0**

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-07-13	Issued for Addendum	NP	AF	<i>[Signature]</i>	<i>[Signature]</i>

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>LIT-F08202</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F251-001
		Spec No:		Line / Vessel Number:	TK-F0820
<b>Asset No:</b>		P&ID:	1-0101-PPID-F005-001	Line ID:	
				Size:	
<b>Description:</b>	HYDROSTATIC LEVEL TRANSMITTER			Manufacturer:	Endress+Hauser
				Model:	Waterpilot FMX21
<b>Purchase Order:</b>		<b>Vendor:</b>		Synergy	
<b>Requisition Number:</b>		<b>Job Number:</b>			


<b>Fluid:</b>	Sodium Hydroxide				
<b>Fluid State:</b>	Liquid				
<b>PROCESS CONDITIONS</b>	<b>Min:</b>	<b>Normal (Operating):</b>	<b>Max (Full Scale):</b>	<b>Units</b>	
	<b>Flow:</b>				
	<b>Pressure:</b>	-	9	9	psig
	<b>Temperature</b>	0	20	40	°C
	<b>Design Pressure:</b>	9	psig	<b>Tank Top Style:</b>	Flat
	<b>Design Temperature:</b>	0 to 40	°C	<b>Tank Bottom Style:</b>	Flat
	<b>Vessel Height:</b>	4.8 meters		<b>Width / Diameter:</b>	3.6 m
	<b>Fluid Dielectric Constant:</b>	N/A		<b>Higher Viscosity:</b>	N/A
	<b>Level Empty:</b>	0 meters		<b>Ambient Temperature:</b>	20 °C
	<b>Level Full:</b>	4.063 meters		<b>Area Classification:</b>	Non Hazardous, Corrosive
<b>Special Condition:</b>	N/A				


<b>TRANSDUCER</b>	<b>Transducer Type:</b>		<b>Rated Temperature:</b>	50 °C
	<b>Measurement Type:</b>	Hydrostatic	<b>Rated Pressure:</b>	
	<b>Body Material:</b>	Level probe corrosion resistant with heat-shrink sleeve	<b>Signal Type:</b>	4-20mA
	<b>Flange Material:</b>		<b>Frequency:</b>	
	<b>Element Material:</b>	1.4435 coated with PPS/Polyolefin	<b>Cable Length:</b>	30 meters
	<b>Vessel I.D.</b>		<b>Conduit Connection:</b>	Note 1
	<b>Measurement Range:</b>	0 - 4.8 meters	<b>NDE Test Category:</b>	
	<b>Mounting Position:</b>	Vertical	<b>Ambient Temperature:</b>	
	<b>Process Connection:</b>	3" Flange 150#	<b>Manufacturer:</b>	Endress+Hauser
	<b>Connection Material:</b>		<b>Model:</b>	FMX21-CD251KGD15A PRPSZ1


<b>TRANSMITTER</b>	<b>Function:</b>	Transmitter	<b>Approval(s):</b>	CSA
	<b>Mounting:</b>		<b>Mounting Kit:</b>	Note 1
	<b>Enclosure Class:</b>	NEMA 4X	<b>Cable Entries:</b>	
	<b>Display:</b>	None	<b>Power Wiring:</b>	2 wire loop powered
	<b>Case Material:</b>		<b>Volume Calculation:</b>	
	<b>Output:</b>	4-20mA	<b>SS Tag:</b>	
	<b>Communication Protocol:</b>		<b>Accuracy:</b>	0.20%
	<b>Range:</b>	0 - 200 kPa		

<b>NOTES</b>	1. Cable-mounting-Screw NPT1-1/2, IP66/67 terminal box.

		EQUIPMENT DATASHEET			DATA SHEET NO.		REV.	
		PUMP			DST-P-F0770,P-F0771,P-F0772			1
		NO.	DATE	REVISION	BY	CHK'D	APPR.	
		0	2022-05-18	ISSUED FOR CONSTRUCTION	JP	RC	JS	
1	2022-07-11	REISSUED FOR CONSTRUCTION	JP	<i>RF</i>	<i>B</i>			
<b>PROJECT:</b>		NEWPCC INTERIM PHOSPHOROUS REMOVAL						
<b>EQUIPMENT NO.</b>		P-F0770, P-F0771, P-F0772		<b>DESCRIPTION:</b>		FERRIC CHLORIDE METERING PUMPS		
o Vendor to Verify/Specify						Rev.		
<b>GENERAL</b>								
Number Required:		Three (3)						
Type:		Gear Type Pump						
Duty:		Continuous, Duty/Standby						
<b>PROCESS DATA</b>								
Fluid:		Ferric Chloride						
Corrosive Compounds:		pH	<1					
Composition:		% wt/wt	37-42%					
Flowing Temperature:		°C	20					
Specific Gravity at Flow Temp.:		1.39-1.46						
Viscosity at Flow Temp.:		cp	N/A					
Vapor Pressure at Flow Temp.:		psia	N/A					
<b>HYDRAULIC DATA</b>								
Condition:			<u>Minimum Flow</u>	<u>Normal Flow</u>	<u>Maximum Flow</u>			
Flow Capacity:		l/hr	8	167	400	1		
Suction Pressure: (Note 1)		psig	16.7	16.7	16.7			
NPSH Available:		m	4.2	4.2	4.2			
Design Cutoff Pressure:		psig	100	100	100			
Design Total Head Required:		m	27	27	31			
Operating Pressure:		psig	80	80	80			
NPSH Required:		m	0.6	0.6	0.6			
o Pump Speed		rpm	300	600	1750			
o % of Full Rated Speed		%	17%	34%	100%			
<b>CONSTRUCTION</b>								
Casing:		PVDF						
o Connection, flange rating:		150#						
o Packing or Seal:		Sealless						
o Gears:		Carbon-reinforced PTFE						
Impeller Diameter:		N/A						
Manufacturer, Model No.:		Basis of Design: Pulsafeeder Eclipse, E12KLEF-X or approved equal as per Section B8.						
o Pump Size:		3/4" x 3/4" (20mm x 20mm)						
o Drive Configuration:		Seal-less mag drive						
o Pump Full Speed		rpm	1750					
<b>DRIVER</b>								
Variable or Constant Speed		Variable (Note 2)						
Type:		Inverter Duty electric motor						
o Horsepower and RPM Rating:		hp	0.5					
o Motor Rated Speed		rpm	1800					
Electric Characteristics:		575V / 3PH / 60 Hz						
o Motor Enclosure:		TEFC (Note 3)						
Service Factor:		1.25						
<b>BASE</b>								
Base Type:		Pump shall be mounted and factory assembled on triplex skid with all associated piping and components. Stand alone frame shall be HSS tubing. Frame shall be painted with chemical resistant paint. All backboards for mounting of piping and components shall be HDPE.						
<b>NOTES</b>								
1 Suction pressure is dependent on height of fluid in the tank. Thus, suction pressure is subject to change. Noted pressure is based on full tank.								
2 VFD to be provided and mounted by others.								
3 Nameplate shall indicate the IP rating and state the Zone, Class, and/or Division areas in which the motors are certified.								
4 Reference general arrangement drawings (1-0101-MGAD-A001-001, 1-0101-MGAD-F211-001, 1-0101-MGAD-F025-001) and process and instrumentation diagrams (1-0101-PPID-F007-001) for additional information.								
5 All electrical factory installed components on the skid shall be terminated in an electrical junction box for connection to the process control system.								
Junction box shall be mounted directly on the skid.								

		EQUIPMENT DATASHEET PUMP			DATA SHEET NO.		REV.
					DST-P-F0780,P-F0781		0
		NO.	DATE	REVISION	BY	CHK'D	APPR.
		0	2022-05-18	ISSUED FOR CONSTRUCTION	JP		
<b>PROJECT:</b>		NEWPCC INTERIM PHOSPHOROUS REMOVAL					
<b>EQUIPMENT NO.</b>		P-F0780, P-F0781		<b>DESCRIPTION:</b>			
				FERRIC CHLORIDE TRANSFER PUMPS			
o Vendor to Verify/Specify							Rev.
<b>GENERAL</b>							
Number Required:		Two (2)					
Type:		Gear Type Pump					
Duty:		Continuous, Duty/Standby					
<b>PROCESS DATA</b>							
Fluid:		Ferric Chloride					
Corrosive Compounds:		pH	<1				
Composition:		% wt/wt	37-42%				
Flowing Temperature:		°C	20				
Specific Gravity at Flow Temp.:		1.39-1.46					
Viscosity at Flow Temp.:		cp	N/A				
Vapor Pressure at Flow Temp.:		psia	N/A				
<b>HYDRAULIC DATA</b>							
Condition:		<u>Minimum Flow</u>		<u>Normal Flow</u>		<u>Maximum Flow</u>	
Flow Capacity:		l/hr	90	1500	1700		
Suction Pressure: (Note 1)		psig	16.7	16.7	16.7		
NPSH Available:		m	4.2	4.1	4.1		
Design Cutoff Pressure:		psig	100	100	100		
Design Total Head Required:		m	0.2	32	40		
Operating Pressure:		psig	80	80	80		
NPSH Required:		m	0.6	0.6	0.6		
o Pump Speed		rpm	300	1600	1750		
o % of Full Rated Speed		%	17%	91%	100%		
<b>CONSTRUCTION</b>							
Casing:		PVDF					
o Connection, flange rating:		150#					
o Packing or Seal:		Sealless					
o Gears:		Carbon-reinforced PTFE					
Impeller Diameter:		N/A					
Manufacturer, Model No.:		Basis of Design: Pulsafeeder Eclipse, E25NFVF-X or approved equal as per Section B8.					
o Pump Size:		1"x1" (25mm x 25mm)					
o Drive Configuration:		Seal-less mag drive					
o Pump Full Speed		rpm	1750				
<b>DRIVER</b>							
Variable or Constant Speed		Variable (Note 2)					
Type:		Inverter duty electric motor					
o Horsepower and RPM Rating:		hp	1.5				
o Motor Rated Speed		rpm	1800				
Electric Characteristics:		575V / 3PH / 60 Hz					
o Motor Enclosure:		TEFC (Note 3)					
Service Factor:		1.25					
<b>BASE</b>							
Base Type:		Pump shall be mounted and factory assembled on duplex skid with all associated piping and components. Stand alone frame shall be HSS tubing. Frame shall be painted with chemical resistant paint. All backboards for mounting of piping and components shall be HDPE.					
<b>NOTES</b>							
1 Suction pressure is dependent on height of fluid in the tank. Thus, suction pressure is subject to change. Noted pressure is based on full tank.							
2 VFD to be provided and mounted by others.							
3 Nameplate shall indicate the IP rating and state the Zone, Class, and/or Division areas in which the motors are certified.							
4 Reference general arrangement drawings (1-0101-MGAD-A001-001, 1-0101-MGAD-F211-001, 1-0101-MGAD-F025-001) and process and instrumentation diagrams (1-0101-PPID-F009-001) for additional information.							
5 All electrical factory installed components on the skid shall be terminated in an electrical junction box for connection to the process control system.							
Junction box shall be mounted directly on the skid.							

		EQUIPMENT DATASHEET			DATA SHEET NO.		REV.	
		PUMP			DST-P-F0830,P-F0831,P-F0832			1
		NO.	DATE	REVISION	BY	CHK'D	APPR.	
		0	2022-05-18	ISSUED FOR CONSTRUCTION	JP	RC	JS	
<b>PROJECT:</b>		NEWPCC INTERIM PHOSPHOROUS REMOVAL		1	OF	1		
<b>EQUIPMENT NO.</b>		P-F0830, P-F0831, P-F0832		<b>DESCRIPTION:</b>			SODIUM HYDROXIDE METERING PUMPS	
o Vendor to Verify/Specify							Rev.	
<b>GENERAL</b>								
Number Required:		Three (3)						
Type:		Gear Type Pump						
Duty:		Continuous, Duty/Standby						
<b>PROCESS DATA</b>								
Fluid:		Sodium Hydroxide						
Corrosive Compounds:		pH	>14					
Composition:		% wt/wt	50%					
Flowing Temperature:		°C	20					
Specific Gravity at Flow Temp.:		1.53						
Viscosity at Flow Temp.:		cp	36.0					
Vapor Pressure at Flow Temp.:		psia	N/A					
<b>HYDRAULIC DATA</b>								
Condition:		<u>Minimum Flow</u>		<u>Normal Flow</u>		<u>Maximum Flow</u>		
Flow Capacity:		l/hr	8	67	400	1		
Suction Pressure: (Note 1)		psig	7.01	7.01	7.01			
NPSH Available:		m	5.1	5.1	5.1			
Design Cutoff Pressure:		psig	100	100	100			
Design Total Head Required:		m	27	27	31			
Operating Pressure		psig	80	80	80			
NPSH Required:		m	0.6	0.6	0.6			
o Pump Speed		rpm	300	300	1750			
o % of Full Rated Speed		%	17%	17%	100%			
<b>CONSTRUCTION</b>								
Casing:		PVDF						
o Connection, flange rating:		150#						
o Packing or Seal:		Sealless						
o Gears:		Carbon-reinforced PTFE						
Impeller Diameter:		N/A						
Manufacturer, Model No.:		Basis of Design: Pulsafeeder Eclipse, E12KLEF-X or approved equal as per Section B8.						
o Pump Size:		3/4" x 3/4" (20mm x 20mm)						
o Drive Configuration:		Seal-less mag drive						
o Pump Full Speed		rpm	1750					
<b>DRIVER</b>								
Variable or Constant Speed		Variable (Note 2)						
Type:		Inverter Duty electric motor						
o Horsepower and RPM Rating:		hp	0.5					
o Motor Rated Speed		rpm	1800					
Electric Characteristics:		575V / 3PH / 60 Hz						
o Motor Enclosure:		TEFC (Note 3)						
Service Factor:		1.25						
<b>BASE</b>								
Base Type:		Pump shall be mounted and factory assembled on triplex skid with all associated piping and components. Stand alone frame shall be HSS tubing. Frame shall be painted with chemical resistant paint. All backboards for mounting of piping and components shall be HDPE.						
<b>NOTES</b>								
1 Suction pressure is dependent on height of fluid in the tank. Thus, suction pressure is subject to change. Noted pressure is based on full tank.								
2 VFD to be provided and mounted by others.								
3 Nameplate shall indicate the IP rating and state the Zone, Class, and/or Division areas in which the motors are certified.								
4 Reference general arrangement drawings (1-0101-MGAD-A001-001, 1-0101-MGAD-F203-001, 1-0101-MGAD-F027-001) and process and instrumentation diagrams (1-0101-PPID-F008-001) for additional information.								
5 All electrical factory installed components on the skid shall be terminated in an electrical junction box for connection to the process control system. Junction box shall be mounted directly on the skid.								

		EQUIPMENT DATASHEET			DATA SHEET NO.		REV.
					DST-P-G0751		0
		PUMP			SHEET	1	OF
NO.	DATE	REVISION		BY	CHK'D	APPR.	
0	2022-05-18	ISSUED FOR CONSTRUCTION		JP			
PROJECT:		NEWPCC INTERIM PHOSPHOROUS REMOVAL					
EQUIPMENT NO.		P-G0751		DESCRIPTION:			FERRIC CHLORIDE METERING PUMP FOR DP-2.1A/B
o Vendor to Verify/Specify							Rev.
<b>GENERAL</b>							
Number Required:		One (1)					
Type:		Diaphragm					
Duty:		Continuous					
<b>PROCESS DATA</b>							
Fluid:		Ferric Chloride					
Corrosive Compounds:		pH	<1				
Composition:		% wt/wt	37-42%				
Flowing Temperature:		°C	20				
Specific Gravity at Flow Temp.:		1.39-1.46					
Viscosity at Flow Temp.:		cp	N/A				
Vapor Pressure at Flow Temp.:		psia	N/A				
<b>HYDRAULIC DATA</b>							
Condition:		<u>Minimum Flow</u>		<u>Normal Flow</u>		<u>Maximum Flow</u>	
Flow Capacity:		l/hr	-	200	271		
Suction Pressure: (Note 1)		psig	-	1	1		
NPSH Available:		m	-	21	20		
Design Cutoff Pressure:		psig	-	100	100		
Design Total Head Required:		m	-	25	25		
Operating Pressure:		psig	-	80	80		
o NPSH Required:		m	-				
o Pump Speed		rpm	-				
% of Full Rated Speed		%	-				
<b>CONSTRUCTION</b>							
Casing:		PVDF					
o Connection, flange rating:		PVDF, DN25					
o Packing or Seal:		EPDM/PTFE					
Impeller:		N/A					
Impeller Diameter:		N/A					
o Manufacturer, Model No.:		Basis of design: ProMinent Sigma 2, S2CBH07220PVTS070UD81001EN or approved equal as per Section B8.					
Pump Size:		N/A					
o Drive Configuration:		Motor-driven diaphragm					
o Pump Full Speed		Strokes/min	160				
<b>DRIVER</b>							
Variable or Constant Speed		Variable (Note 2)					
Type:		Inverter duty electric motor					
o Power Rating:		W	220				
o Motor Rated Speed		rpm					
Electric Characteristics:		120V / 1PH / 60 Hz					
o Motor Enclosure:		TEFC (Note 3)					
Service Factor:		1.25					
<b>BASE</b>							
Base Type:		Pump shall be mounted and factory assembled on triplex skid with all associated piping and components. Stand alone frame shall be HSS tubing. Frame shall be painted with chemical resistant paint. All backboards for mounting of piping and components shall be HDPE.					
<b>NOTES</b>							
1 Suction pressure is dependent on height of fluid in the tank. Thus, suction pressure is subject to change. Noted pressure is based on full tank.							
2 VFD to be provided and mounted by others.							
3 Nameplate shall indicate the IP rating and state the Zone, Class, and/or Division areas in which the motors are certified.							
4 Reference general arrangement plan drawings (1-0101-MGAD-A001-001, 1-0101-MGAD-G014-001, 1-0101-MGAD-G015-001) and process and instrumentation diagrams (1-0101-PPID-G012-001) for additional information.							
5 All electrical factory installed components on the skid shall be terminated in an electrical junction box for connection to the process control system. Junction box shall be mounted directly on the skid.							
6 Pump skid shall be installed on top of chemical containment pallet system (Specification Section 40 06 01). and connected to remote dosing tank, TK-G0750 (Specification Section 40 05 01).							

<b>KGS</b> GROUP		<b>Pressure Instrument</b>				DATA SHEET NO.		REV.
						DST-PIT-F07801		
Project: <b>21-0107-015</b>		<b>Pressure Transmitter</b>				SHEET	1	OF
		NO.	DATE	REVISION		BY	CHK'D	PROC.
TAG NO: <b>PIT-F07801</b>		Serial No:	Loop Wiring Diagrams:		DG	JP		
Asset No:		Spec No:	Line / Vessel Number:		25-FC-PV04-0732			
Description: PRESSURE INDICATING TRANSMITTER		P&ID:	1-0101-PPID-F009-001		Line ID:	Size:	15mm	Schedule:
Purchase Order:		Vendor:		Siemens				
Requisition Number:		Job Number:		Transwest				
Fluid:		Ferric Chloride						
Fluid State:		Liquid						
PROCESS CONDITIONS	Flow:	Minimum: 90	Normal (Operating): 1500	Maximum (Full Scale): 1700	Units: L/hr			
	Pressure:	60	60	60	psig			
	Temperature:	0	20	30	°C			
	Design Pressure:	150	psig	Vapor Pressure Pv:	N/A			
	Design Temperature:	-10 to 50	°C	Viscosity:	N/A			
TRANSMITTER	Lower SG / Density:	1.39	Compressibility (Z):	N/A				
	Higher SG / Density:	1.46	Area Classification:	Non Hazardous, Corrosive				
	Pipe Rating:	Class 150		Ambient Temperature:	20	°C		
	Pipe Material:	PVC		Special Condition:	N/A			
	Stainless Steel Tag:			Wetted O-Ring Material:	N/A			
Application:	Pressure		Fill Fluid:	Note 2				
Type:	Indicating Transmitter		Elevation:					
Enclosure Class:			Mounting:					
Housing:			Instrument Range:		to			
Signal / Protocol:	Profibus		Calibration Range:		to			
Power Supply:	24 VDC		Controller Display Range:		to			
Electrical Connection:	NPT 1/2		Static Pressure Range:		to			
Accuracy:	Note 2		Allowable Operating	Pressure:		to		
Output at Tx Failure:				Temperature:		to		
Response Time:			DCS Range:		to			
Process Conn. / Rating:	1/2" NPT		Max. Static Pressure:					
Element Material:			Suppression:					
MANIFOLD	Manifold Type:			Max Temperature Rating:				
	Body Material:			Process Connection:				
	Trim:			Process Connection Rating:				
	Packing:			Manufacturer:				
	Max Pressure Rating:			Model:				
SEAL DIAPHRAGM	Diaphragm	High	Low	Top Housing Material:				
	Size & Type:	15MM (1/2" NPT)		Bottom Housing Material:				
	Process Connection:	Threaded		Instrument Connection:				
	Material:	Note 2		Temperature Rating:				
	Flush Connection:	8mm (1/4")		Pressure Rating:				
	Capillary	Length:			Manufacturer:			
Fill Fluid:				Model:				
Material:								
OPTION	Integral Meter:			Hydrostatic Testing:				
	Scale:			Mounting Brackets:				
NOTES	1. Manufacturer and series were standardized by the City via RFP 449-2014, no alternatives or substitute will be accepted.							
	2. To be filled out by Vendor							



# Pressure Instrument

DATA SHEET NO.

REV.

DST-PIT-F07802

0

## Pressure Transmitter

SHEET

1

OF

1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022 18 05	Issued for Construction	DG	JP		

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>PIT-F07802</b>	Serial No:		Loop Wiring Diagrams:	
Asset No:		Spec No:		Line / Vessel Number:	25-FC-PV04-0732
Description:	PRESSURE INDICATING TRANSMITTER	P&ID:	1-0101-PPID-F009-001	Line ID:	Size: 15mm Schedule:
Purchase Order:		Vendor:		Manufacturer:	Siemens
Requisition Number:		Job Number:		Model:	Sitran P420
					Transwest

PROCESS CONDITIONS

Fluid:	Ferric Chloride			
Fluid State:	Liquid			
	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:	90	1500	1700	L/hr
Pressure:	60	60	60	psig
Temperature:	0	20	30	°C
Design Pressure:	150	psig	Vapor Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Viscosity:	N/A
Lower SG / Density:	1.39		Compressibility (Z):	N/A
Higher SG / Density:	1.46		Area Classification:	Non Hazardous, Corrosive
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	PVC		Special Condition:	N/A

TRANSMITTER

Stainless Steel Tag:		Wetted O-Ring Material:	N/A
Application:	Pressure	Fill Fluid:	Note 2
Type:	Indicating Transmitter	Elevation:	
Enclosure Class:		Mounting:	
Housing:		Instrument Range:	to
Signal / Protocol:	Profibus	Calibration Range:	to
Power Supply:	24 VDC	Controller Display Range:	to
Electrical Connection:	NPT 1/2	Static Pressure Range:	to
Accuracy:	Note 2	Allowable Operating Pressure:	to
Output at Tx Failure:		Temperature:	to
Response Time:		DCS Range:	to
Process Conn. / Rating:	1/2" NPT	Max. Static Pressure:	
Element Material:		Suppression:	

MANIFOLD

Manifold Type:		Max Temperature Rating:	
Body Material:		Process Connection:	
Trim:		Process Connection Rating:	
Packing:		Manufacturer:	
Max Pressure Rating:		Model:	

SEAL DIAPHRAGM

Diaphragm	High	Low	Top Housing Material:
Size & Type:	15MM (1/2" NPT)		Bottom Housing Material:
Process Connection:	Threaded		Instrument Connection:
Material:	Note 2		Temperature Rating:
Flush Connection:	8mm (1/4")		Pressure Rating:
Capillary	Length:		Manufacturer:
	Fill Fluid:		Model:
	Material:		

OPTION

Integral Meter:		Hydrostatic Testing:	
Scale:		Mounting Brackets:	

NOTES

1. Manufacturer and series were standardized by the City via RFP 449-2014, no alternatives or substitute will be accepted.
2. To be filled out by Vendor



# Pressure Instrument

DATA SHEET NO.

REV.

DST-PIT-F8711

0

## Pressure Transmitter

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022 18 05	Issued for Construction	DG	JP		

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>PIT-F8711</b>	Serial No:		Loop Wiring Diagrams:	
Asset No:		Spec No:		Line / Vessel Number:	25-SEA-CU01-0601
Description:	PRESSURE INDICATING TRANSMITTER	P&ID:	1-0101-PPID-F002-001	Line ID:	Size: 25mm Schedule:
Purchase Order:		Vendor:		Manufacturer:	Siemens
Requisition Number:		Job Number:		Model:	Sitran P420
					Transwest

Fluid:	Service Air
Fluid State:	Gas

PROCESS CONDITIONS

	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:	3.0	5.4	7.0	L/s
Pressure:	0	10	100	psig
Temperature:	0	20	30	°C

Design Pressure:	150	psig	Vapor Pressure Pv:	N/A
Design Temperature:	-40 to 100	°C	Viscosity:	N/A
Lower SG / Density:	N/A		Compressibility (Z):	1.00
Higher SG / Density:	1.00		Area Classification:	Non Hazardous, Corrosive
Pipe Rating:	N/A		Ambient Temperature:	20 °C
Pipe Material:	Copper Type L		Special Condition:	N/A

TRANSMITTER

Stainless Steel Tag:		Wetted O-Ring Material:	N/A
Application:	Pressure	Fill Fluid:	Note 2
Type:	Indicating Transmitter	Elevation:	
Enclosure Class:		Mounting:	
Housing:		Instrument Range:	to
Signal / Protocol:	Profibus	Calibration Range:	to
Power Supply:	24 VDC	Controller Display Range:	to
Electrical Connection:	NPT 1/2	Static Pressure Range:	to
Accuracy:	Note 2	Allowable Operating Pressure:	to
Output at Tx Failure:		Temperature:	to
Response Time:		DCS Range:	to
Process Conn. / Rating:	1/2" NPT	Max. Static Pressure:	
Element Material:		Suppression:	

MANIFOLD

Manifold Type:		Max Temperature Rating:	
Body Material:		Process Connection:	
Trim:		Process Connection Rating:	
Packing:		Manufacturer:	
Max Pressure Rating:		Model:	

SEAL DIAPHRAGM

Diaphragm	High	Low	Top Housing Material:
Size & Type:	15MM (1/2" NPT)		Bottom Housing Material:
Process Connection:	Threaded		Instrument Connection:
Material:	Note 2		Temperature Rating:
Flush Connection:	8mm (1/4")		Pressure Rating:
Capillary	Length:		Manufacturer:
	Fill Fluid:		Model:
	Material:		

OPTION

Integral Meter:		Hydrostatic Testing:	
Scale:		Mounting Brackets:	

NOTES

1. Manufacturer and series were standardized by the City via RFP 449-2014, no alternatives or substitute will be accepted.
2. To be filled out by Vendor





## Pressure Instrument

### Generic Pressure Switch

DATA SHEET NO. \_\_\_\_\_ REV. \_\_\_\_\_

**DST-PSH-F07701** **0**

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022 18 05	Issued for Construction	DG	JP		

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>PSH-F07701</b>	Serial No.:		Loop Wiring Diagrams:	1-0101-AILD-F216-001
		Spec No.:		Line / Vessel Number:	15-FC-PV04-0722
<b>Asset No:</b>		P&ID:	1-0101-PPID-F007-001	Line ID:	
				Size:	15mm Schedule:
<b>Description:</b>	PRESSURE SWITCH HIGH			Manufacturer:	
				Model:	Ashcroft B-Series
<b>Purchase Order:</b>		<b>Vendor:</b>			
<b>Requisition Number:</b>		<b>Job Number:</b>			

<b>Fluid:</b>	Ferric Chloride
<b>Fluid State:</b>	Liquid

Process Data Case (Flow):	Min:	Normal (Operating):	Max (Full Scale):	Units
Flow:	8	167	792	L/hr
Pressure:	60	60	60	psig
Temperature	0	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

<b>Type:</b>	Pressure Switch	Blow Out Protection:	
<b>Function:</b>	SPDT	Pressure Element Material:	Note 1
<b>Switch Range:</b>	to psi	Actuator Seal:	
<b>Switch Setpoint:</b>	to psi	Connection Size:	1/2" NPTM
<b>Deadband:</b>	Fixed	Connection Location:	
<b>Power Supply:</b>		Enclosure Class:	NEMA4X
<b>Power Wiring:</b>	24 VDC	Manufacturer:	
<b>Case Material:</b>	Epoxy Coated Aluminum	Model:	

<b>Diaphragm:</b>	Element Material:
<b>Size &amp; Type:</b>	Suppression:
<b>Process Connection:</b>	Instrument Range: to
<b>Material:</b>	Calibration Range: to
<b>Flush Connection:</b>	Controller Display Range: to
<b>Capillary Length:</b>	Static Pressure Range: to
<b>Capillary Fill Fluid:</b>	Allow. Oper Pressure: to
<b>Capillary Material:</b>	Allow. Oper Temperature: to

<b>Syphon Type:</b>	Snubber Type:
<b>Syphon Material:</b>	Snubber Material:
<b>Fill Fluid:</b>	Customer SS Tag:
<b>Movement Damping:</b>	Mounting Bracket:

**NOTES**

1. To be filled out by Vendor

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## Pressure Instrument

### Generic Pressure Switch

DATA SHEET NO.      REV.

**DST-PSH-F07711**      **0**

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
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0	2022 18 05	Issued for Construction	DG	JP		
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**Project:**      **21-0107-015**

<b>TAG NO:</b>	<b>PSH-F07711</b>	Serial No.:		Loop Wiring Diagrams:	1-0101-AILD-F217-001
		Spec No.:		Line / Vessel Number:	15-FC-PV04-0723

Asset No.:	P&ID:	1-0101-PPID-F007-001	Line ID:		Size:	15mm	Schedule:	
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Description:	PRESSURE SWITCH	Manufacturer:	
		Model:	Ashcroft B-Series

Purchase Order:		Vendor:	
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Requisition Number:		Job Number:	
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Fluid:	Ferric Chloride
Fluid State:	Liquid

<b>PROCESS CONDITIONS</b>	Process Data Case (Flow-):	Min:	Normal (Operating):	Max (Full Scale):	Units
	Flow:	8	167	792	L/hr
	Pressure:	60	60	60	psig
	Temperature:	0	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

<b>SWITCH</b>	Type:	Pressure Switch	Blow Out Protection:	
	Function:	SPDT	Pressure Element Material:	Note 1
	Switch Range:	to      psi	Actuator Seal:	
	Switch Setpoint:	to      psi	Connection Size:	1/2" NPTM
	Deadband:	Fixed	Connection Location:	
	Power Supply:		Enclosure Class:	NEMA4X
	Power Wiring:	24 VDC	Manufacturer:	
	Case Material:	Epoxy Coated Aluminum	Model:	

<b>SEAL DIAPHRAGM</b>	Diaphragm:		Element Material:	
	Size & Type:		Suppression:	
	Process Connection:		Instrument Range:	to
	Material:		Calibration Range:	to
	Flush Connection:		Controller Display Range:	to
	Capillary Length:		Static Pressure Range:	to
	Capillary Fill Fluid:		Allow. Oper Pressure:	to
	Capillary Material:		Allow. Oper Temperature:	to

<b>OPTIONS</b>	Syphon Type:		Snubber Type:	
	Syphon Material:		Snubber Material:	
	Fill Fluid:		Customer SS Tag:	
	Movement Damping:		Mounting Bracket:	

<b>NOTES</b>	1. To be filled out by Vendor



## Pressure Instrument

### Generic Pressure Switch

DATA SHEET NO. REV. **0**

**DST-PSH-F07721** **1**

SHEET **1** OF **1** APPR. **1**

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022 18 05	Issued for Construction	DG	JP		

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>PSH-F07721</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F218-001
		Spec No:		Line / Vessel Number:	15-FC-PV04-0724
<b>Asset No:</b>		P&ID:	1-0101-PPID-F007-001	Line ID:	
				Size:	15mm Schedule:
<b>Description:</b>	PRESSURE SWITCH			Manufacturer:	
				Model:	Ashcroft B-Series
<b>Purchase Order:</b>		<b>Vendor:</b>			
<b>Requisition Number:</b>		<b>Job Number:</b>			

<b>Fluid:</b>	Ferric Chloride
<b>Fluid State:</b>	Liquid

Process Data Case (Flow):	Min:	Normal (Operating):	Max (Full Scale):	Units
Flow:	8	167	792	L/hr
Pressure:	60	60	60	psig
Temperature:	0	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

<b>Type:</b>	Pressure Switch	<b>Blow Out Protection:</b>	
<b>Function:</b>	SPDT	<b>Pressure Element Material:</b>	Note 1
<b>Switch Range:</b>	to psi	<b>Actuator Seal:</b>	
<b>Switch Setpoint:</b>	to psi	<b>Connection Size:</b>	1/2" NPTM
<b>Deadband:</b>	Fixed	<b>Connection Location:</b>	
<b>Power Supply:</b>		<b>Enclosure Class:</b>	NEMA4X
<b>Power Wiring:</b>	24 VDC	<b>Manufacturer:</b>	
<b>Case Material:</b>	Epoxy Coated Aluminum	<b>Model:</b>	

<b>Diaphragm:</b>	<b>Element Material:</b>
<b>Size &amp; Type:</b>	<b>Suppression:</b>
<b>Process Connection:</b>	<b>Instrument Range:</b>
<b>Material:</b>	<b>Calibration Range:</b>
<b>Flush Connection:</b>	<b>Controller Display Range:</b>
<b>Capillary Length:</b>	<b>Static Pressure Range:</b>
<b>Capillary Fill Fluid:</b>	<b>Allow. Oper Pressure:</b>
<b>Capillary Material:</b>	<b>Allow. Oper Temperature:</b>

<b>Syphon Type:</b>	<b>Snubber Type:</b>
<b>Syphon Material:</b>	<b>Snubber Material:</b>
<b>Fill Fluid:</b>	<b>Customer SS Tag:</b>
<b>Movement Damping:</b>	<b>Mounting Bracket:</b>

**NOTES**

1. To be filled out by Vendor

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## Pressure Instrument

### Generic Pressure Switch

DATA SHEET NO.      REV.

**DST-PSH-F08301**      **0**

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
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0	2022 18 05	Issued for Construction	DG	JP		
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**Project:**      **21-0107-015**

<b>TAG NO:</b>	<b>PSH-F08301</b>	Serial No.:		Loop Wiring Diagrams:	
		Spec No.:		Line / Vessel Number:	15-SHD-PV04-0817

Asset No.:	P&ID:	1-0101-PPID-F008-001	Line ID:		Size:	15mm	Schedule:	
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<b>Description:</b>	PRESSURE SWITCH HIGH			Manufacturer:	
				Model:	Ashcroft B-Series

Purchase Order:		Vendor:	
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Requisition Number:		Job Number:	
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Fluid:	Sodium Hydroxide
Fluid State:	Liquid

<b>PROCESS CONDITIONS</b>	Process Data Case (Flow.):	Min:	Normal (Operating):	Max (Full Scale):	Units
	Flow:	8	67	792	L/hr
	Pressure:	60	60	60	psig
	Temperature:	15	20	30	°C
	Design Pressure:	150	psig	Vapour Pressure Pv:	N/A

Design Temperature:	10 to 50	°C	Compressibility (Z):	N/A	
Lower SG / Density:	N/A		Lower Viscosity:	N/A	
Higher SG / Density:	1.53		Higher Viscosity:	36	cP
Pipe Rating:	N/A		Ambient Temperature:	20	°C
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive	
Special Condition:	N/A				

<b>SWITCH</b>	Type:	Pressure Switch			Blow Out Protection:	
	Function:	SPDT			Pressure Element Material:	Note 1
	Switch Range:	to		psi	Actuator Seal:	
	Switch Setpoint:	to		psi	Connection Size:	1/2" NPTM
	Deadband:	Fixed			Connection Location:	
	Power Supply:				Enclosure Class:	NEMA4X
	Power Wiring:	24 VDC			Manufacturer:	
	Case Material:	Epoxy Coated Aluminum			Model:	

<b>SEAL DIAPHRAGM</b>	Diaphragm:		Element Material:		
	Size & Type:		Suppression:		
	Process Connection:		Instrument Range:	to	
	Material:		Calibration Range:	to	
	Flush Connection:		Controller Display Range:	to	
	Capillary Length:		Static Pressure Range:	to	
	Capillary Fill Fluid:		Allow. Oper Pressure:	to	
	Capillary Material:		Allow. Oper Temperature:	to	

<b>OPTIONS</b>	Syphon Type:		Snubber Type:	
	Syphon Material:		Snubber Material:	
	Fill Fluid:		Customer SS Tag:	
	Movement Damping:		Mounting Bracket:	

<b>NOTES</b>	1. To be filled out by Vendor



## Pressure Instrument

### Generic Pressure Switch

DATA SHEET NO. REV.

**DST-PSH-F08311** **0**

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
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0	2022 18 05	Issued for Construction	DG	JP		
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**Project:** 21-0107-015

<b>TAG NO:</b>	<b>PSH-F08311</b>	Serial No.:		Loop Wiring Diagrams:	1-0101-AILD-F244-001
		Spec No.:		Line / Vessel Number:	15-SHD-PV04-0818

Asset No.:	P&ID:	1-0101-PPID-F008-001	Line ID:	Size:	15mm	Schedule:	
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Description:	PRESSURE SWITCH HIGH	Manufacturer:	
		Model:	Ashcroft B-Series

Purchase Order:		Vendor:	
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Requisition Number:		Job Number:	
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Fluid:	Sodium Hydroxide
Fluid State:	Liquid

PROCESS CONDITIONS	Process Data Case (Flow.):	Min:	Normal (Operating):	Max (Full Scale):	Units
	Flow:	8	67	792	L/hr
	Pressure:	60	60	60	psig
	Temperature	15	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A	
Design Temperature:	10 to 50	°C	Compressibility (Z):	N/A	
Lower SG / Density:	N/A		Lower Viscosity:	N/A	
Higher SG / Density:	1.53		Higher Viscosity:	36	cP
Pipe Rating:	N/A		Ambient Temperature:	20	°C
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive	
Special Condition:	N/A				

SWITCH	Type:	Pressure Switch	Blow Out Protection:		
	Function:	SPDT	Pressure Element Material:	Note 1	
	Switch Range:	to	psi	Actuator Seal:	
	Switch Setpoint:	to	psi	Connection Size:	1/2" NPTM
	Deadband:	Fixed		Connection Location:	
	Power Supply:			Enclosure Class:	NEMA4X
	Power Wiring:	24 VDC		Manufacturer:	
	Case Material:	Epoxy Coated Aluminum		Model:	

SEAL DIAPHRAGM	Diaphragm:		Element Material:	
	Size & Type:		Suppression:	
	Process Connection:		Instrument Range:	to
	Material:		Calibration Range:	to
	Flush Connection:		Controller Display Range:	to
	Capillary Length:		Static Pressure Range:	to
	Capillary Fill Fluid:		Allow. Oper Pressure:	to
	Capillary Material:		Allow. Oper Temperature:	to

OPTIONS	Syphon Type:		Snubber Type:	
	Syphon Material:		Snubber Material:	
	Fill Fluid:		Customer SS Tag:	
	Movement Damping:		Mounting Bracket:	

NOTES	1. To be filled out by Vendor



# Pressure Instrument

## Generic Pressure Switch

DATA SHEET NO.

**DST-PSH-F08321**

REV.

**0**

SHEET	1	OF	1
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NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
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0	2022 18 05	Issued for Construction	DG	JP		
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**Project:** **21-0107-015**

<b>TAG NO:</b>	<b>PSH-F08321</b>	Serial No.:		Loop Wiring Diagrams:	1-0101-AILD-F244-001
		Spec No.:		Line / Vessel Number:	15-SHD-PV04-0819

Asset No.:		P&ID:	1-0101-PPID-F008-001	Line ID:		Size:	15mm	Schedule:	
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Description:	PRESSURE SWITCH HIGH			Manufacturer:	
				Model:	Ashcroft B-Series

Purchase Order:		Vendor:	
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Requisition Number:		Job Number:	
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Fluid:	Sodium Hydroxide
Fluid State:	Liquid

<b>PROCESS CONDITIONS</b>	Process Data Case (Flow.):	Min:	Normal (Operating):	Max (Full Scale):	Units
	Flow:	8	67	792	L/hr
	Pressure:	60	60	60	psig
	Temperature	15	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	N/A		Lower Viscosity:	N/A
Higher SG / Density:	1.53		Higher Viscosity:	36
Pipe Rating:	N/A		Ambient Temperature:	20
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

<b>SWITCH</b>	Type:	Pressure Switch	Blow Out Protection:	
	Function:	SPDT	Pressure Element Material:	Note 1
	Switch Range:	to psi	Actuator Seal:	
	Switch Setpoint:	to psi	Connection Size:	1/2" NPTM
	Deadband:	Fixed	Connection Location:	
	Power Supply:		Enclosure Class:	NEMA4X
	Power Wiring:	24 VDC	Manufacturer:	
	Case Material:	Epoxy Coated Aluminum	Model:	

<b>SEAL DIAPHRAGM</b>	Diaphragm:		Element Material:	
	Size & Type:		Suppression:	
	Process Connection:		Instrument Range:	to
	Material:		Calibration Range:	to
	Flush Connection:		Controller Display Range:	to
	Capillary Length:		Static Pressure Range:	to
	Capillary Fill Fluid:		Allow. Oper Pressure:	to
	Capillary Material:		Allow. Oper Temperature:	to

<b>OPTIONS</b>	Syphon Type:		Snubber Type:	
	Syphon Material:		Snubber Material:	
	Fill Fluid:		Customer SS Tag:	
	Movement Damping:		Mounting Bracket:	

<b>NOTES</b>	1. To be filled out by Vendor



# Pressure Instrument

## Generic Pressure Switch

DATA SHEET NO.

REV.

**DST-PSH-F8712**

**0**

SHEET

1

OF

1

NO.

DATE

REVISION

BY

CHK'D

PROC.

APPR.

0

2022 18 05

Issued for Construction

DG

JP

Project:

**21-0107-015**

TAG NO:

**PSH-F8712**

Serial No.

Spec No:

Loop Wiring Diagrams:

1-0101-AILD-F215-001

Line / Vessel Number:

25-SEA-CU01-0601

Asset No:

P&ID:

1-0101-PPID-F002-001

Line ID:

Size:

25mm

Schedule:

Description:

PRESSURE SWITCH

Manufacturer:

Model:

Ashcroft B-Series

Purchase Order:

Vendor:

Requisition Number:

Job Number:

PROCESS CONDITIONS

Fluid:	Service Air
Fluid State:	Gas

Process Data Case (Flow):	Min:	Normal (Operating):	Max (Full Scale):	Units
Flow:	3.0	5.4	7.0	L/s
Pressure:	0	10	100	psig
Temperature	0	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-40 to 100	°C	Compressibility (Z):	1.00
Lower SG / Density:	N/A		Lower Viscosity:	N/A
Higher SG / Density:	1.00		Higher Viscosity:	N/A
Pipe Rating:	N/A		Ambient Temperature:	20 °C
Pipe Material:	Copper Type L		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

SWITCH

Type:	Pressure Switch	Blow Out Protection:	
Function:	SPDT	Pressure Element Material:	Note 1
Switch Range:	to psi	Actuator Seal:	
Switch Setpoint:	to psi	Connection Size:	1/2" NPTM
Deadband:	Fixed	Connection Location:	
Power Supply:		Enclosure Class:	NEMA4X
Power Wiring:	24 VDC	Manufacturer:	
Case Material:	Epoxy Coated Aluminum	Model:	

SEAL DIAPHRAGM

Diaphragm:		Element Material:	
Size & Type:		Suppression:	
Process Connection:		Instrument Range:	to
Material:		Calibration Range:	to
Flush Connection:		Controller Display Range:	to
Capillary Length:		Static Pressure Range:	to
Capillary Fill Fluid:		Allow. Oper Pressure:	to
Capillary Material:		Allow. Oper Temperature:	to

OPTIONS

Syphon Type:		Snubber Type:	
Syphon Material:		Snubber Material:	
Fill Fluid:		Customer SS Tag:	
Movement Damping:		Mounting Bracket:	

NOTES

1. To be filled out by Vendor

		EQUIPMENT DATASHEET PUMP				DATA SHEET NO.		REV.
						DST-P-Y0791,P-Y0792,P-Y0793		0
		NO.	DATE	REVISION	BY	CHK'D	APPR.	
0	2022-05-18	ISSUED FOR CONSTRUCTION	JP					
<b>PROJECT:</b>		NEWPCC INTERIM PHOSPHOROUS REMOVAL						
<b>EQUIPMENT NO.</b>		P-Y0791, P-Y0792, P-Y0793		<b>DESCRIPTION:</b>		FERRIC CHLORIDE METERING PUMPS FOR DP-4.1, 4.2, 4.3		
o Vendor to Verify/Specify							Rev.	
<b>GENERAL</b>								
Number Required:		Three (3)						
Type:		Solenoid-driven diaphragm						
Duty:		Continuous						
<b>PROCESS DATA</b>								
Fluid:		Ferric Chloride						
Corrosive Compounds:		pH	<1					
Composition:		% wt/wt	37-42%					
Flowing Temperature:		°C	20					
Specific Gravity at Flow Temp.:		1.39-1.46						
Viscosity at Flow Temp.:		cp	N/A					
Vapor Pressure at Flow Temp.:		psia	N/A					
<b>HYDRAULIC DATA</b>								
Condition:		<u>Minimum Flow</u>		<u>Normal Flow</u>		<u>Maximum Flow</u>		
Flow Capacity:		l/hr	-	30	30			
Suction Pressure: (Note 1)		psig	-	1	1			
NPSH Available:		m	-	21	21			
Design Cutoff Pressure:		psig	-	100	100			
Design Total Head Required:		m	-	0	0			
Operating Pressure:		psig	-	80	80			
o NPSH Required:		m	-					
o Pump Speed		Strokes/min	-	200	200			
o % of Full Rated Speed		%	-	100%	100%			
<b>CONSTRUCTION</b>								
Casing:		PVDF						
o Connection, flange rating:		PVDF, DN10						
o Packing or Seal:		PTFE						
Impeller:		N/A						
Impeller Diameter:		N/A						
o Manufacturer, Model No.:		Basis of Design: ProMinent Gamma XL, GXLAUS0730PVT2Q000UDC130EN or approved equal as per Section B8.						
Pump Size:		N/A						
o Drive Configuration:		Solenoid-driven diaphragm						
o Pump Full Speed		Strokes/min	200					
<b>DRIVER</b>								
Variable or Constant Speed		Variable (Note 2)						
Type:		Inverter duty electric motor						
o Mean Power Consumption:		W	78					
o Motor Rated Speed		rpm						
Electric Characteristics:		120V / 1PH / 60 Hz						
o Motor Enclosure:		TEFC (Note 3)						
Service Factor:		1.25						
<b>BASE</b>								
Base Type:		Pump shall be mounted and factory assembled on simplex skid with all associated piping and components. Stand alone frame shall be HSS tubing. Frame shall be painted with chemical resistant paint. All backboards for mounting of piping and components shall be HDPE.						
<b>NOTES</b>								
1 Suction pressure is dependent on height of fluid in the tank. Thus, suction pressure is subject to change. Noted pressure is based on full tank.								
2 VFD to be provided and mounted by others.								
3 Nameplate shall indicate the IP rating and state the Zone, Class, and/or Division areas in which the motors are certified.								
4 Reference site plan drawings (1-0101-MGAD-A001-001, 1-0101-MGAD-Y301-001, 1-0101-MGAD-Y001-001) and process and instrumentation diagrams (1-0101-PPID-Y001-001) for additional information.								
5 All electrical factory installed components on the skid shall be terminated in an electrical junction box for connection to the process control system. Junction box shall be mounted directly on the skid.								
6 Pump skid shall be installed on top of chemical containment pallet system (Specification Section 40 06 01). and connected to remote dosing tank TK-Y0790 (Specification Section 40 05 01).								





# Control Valve

DATA SHEET NO.

REV.

DST-XV-F8700

0

## Ball Valve

SHEET 1 OF 1

NO. DATE REVISION BY CHK'D PROC. APPR.

0 2022-05-18 Issued for Construction JP RC *RL* *RL*

Project: 21-0107-015

TAG NO: XV-F8700 Serial No: Loop Wiring Diagrams: 1-0101-AILD-F201-001

Asset No: P&amp;ID: 1-0101-PPID-F001-001 Line ID: Size: 80mm Schedule: 80

Description: MOTORIZED BALL VALVE Manufacturer: ROTORK

Purchase Order: Vendor: Rotork Controls Canada Ltd.

Requisition Number: Job Number:

Fluid: Ferric Chloride  
Fluid State: Liquid

PROCESS CONDITIONS	Minimum:		Normal (Operating):		Maximum (Full Scale):		Units:
	Flow:	3.0	5.4	7.0	L/s		
	Pressure:	60	60	60	psig		
	Temperature:	0	20	30	°C		
Design Pressure:	150	psig	Vapour Pressure Pv:	N/A			
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A			
Lower SG / Density:	1.39		Lower Viscosity:	N/A			
Higher SG / Density:	1.46		Higher Viscosity:	N/A			
Pipe Rating:	Class 150		Ambient Temperature:	20	°C		
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive			
Special Condition:	N/A						

VALVE BODY	Valve Type:	Ball Valve	Maximum Pressure:	150	psig
	Body Size:	80mm	Inlet Connection Face:	Flanged	
	Body Material:	PVC	Flange Face Finish:	Flat Face	
	Bonnet Style:	N/A	Lubrication & Isolation:		
	ANSI Class:	150	Packing Material:	EPDM or Viton	
	Ball Material:	PVC	Packing Style:		

TRIM	Manufacturer:	Chemline	Shaft Material:	PVC
	Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
	Size:	80mm	Seal Material:	EPDM or Viton
	Rated Cv:	410	Ball Material:	PVC
	Characteristic:		Leakage Class:	
	Trim Type:			

ACTUATOR	Actuator Description:	Motorized Valve	Size:	125			
	Manufacturer:	ROTORK	Mounting Position:				
	Model:	IQT Series	Actuator Orientation:	Parallel			
	Direction:		Stroke Time Open:	s			
	Fail Position:	Fail Last Position	Stroke Time Close:	s			
	Operating Sig:		Torque/Thrust	125 Nm			
	Electrical Operation	Voltage:	120 V 1 Ph	Pneumatic Operation	Min	Max	Units
		FLA:	A		N/A	N/A	Psig
LRA:		A	Bench Range:		N/A	Psig	

OPTIONS	Stainless Steel Tag:	XV-F8700	Handwheel:	Yes
	Positioner:	No	Limit Switch Closed:	Yes
	Air Set:	No	Limit Switch Open:	Yes
	Gauges:	No	Solenoid Valve:	No
	Bypass:	No	Electrical Classification:	Note 2
	Pilot Light:	No	Backup Power:	No
	Marshalling Box:	No		

- NOTES
- Vendor to fill in or provide relevant information in empty field.
  - NEMA 4X, non-hazardous area.
  - Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO.

REV.

DST-XV-F8702

0

## Ball Valve

SHEET 1 OF 1

NO. DATE REVISION BY CHK'D PROC. APPR.

0 2022-05-18 Issued for Construction JP RC

Project: 21-0107-015

TAG NO: XV-F8702 Serial No: Loop Wiring Diagrams: 1-0101-AILD-F204-001

Asset No: P&amp;ID: 1-0101-PPID-F004-001 Line ID: Size: 80mm Schedule: 80

Description: MOTORIZED BALL VALVE Manufacturer: ROTORK

Purchase Order: Vendor: Rotork Controls Canada Ltd.

Requisition Number: Job Number:

Fluid: Ferric Chloride  
Fluid State: Liquid

	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:	3.0	5.4	7.0	L/s
Pressure:	60	60	60	Psig
Temperature:	0	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

Valve Type:	Ball Valve	Maximum Pressure:	150	psig
Body Size:	80mm	Inlet Connection Face:	Flanged	
Body Material:	PVC	Flange Face Finish:	Flat Face	
Bonnet Style:	N/A	Lubrication & Isolation:		
ANSI Class:	150	Packing Material:	EPDM or Viton	
Ball Material:	PVC	Packing Style:		

Manufacturer:	Chemline	Shaft Material:	PVC
Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
Size:	80mm	Seal Material:	EPDM or Viton
Rated Cv:	410	Ball Material:	PVC
Characteristic:		Leakage Class:	
Trim Type:			

Actuator Description:	Motorized Valve	Size:	125
Manufacturer:	ROTORK	Mounting Position:	
Model:	IQT Series	Actuator Orientation:	Parallel
Direction:		Stroke Time Open:	s
Fail Position:	Fail Last Position	Stroke Time Close:	s
Operating Sig:		Torque/Thrust	125 Nm
Electrical Operation	Voltage:	120 V 1 Ph	Min Max Units
	FLA:		N/A N/A Psig
	LRA:		N/A Psig

Stainless Steel Tag:	XV-F8702	Handwheel:	Yes
Positioner:	No	Limit Switch Closed:	Yes
Air Set:	No	Limit Switch Open:	Yes
Gauges:	No	Solenoid Valve:	No
Bypass:	No	Electrical Classification:	Note 2
Pilot Light:	No	Backup Power:	No
Marshalling Box:	No		

- NOTES
- Vendor to fill in or provide relevant information in empty field.
  - NEMA 4X, non-hazardous area.
  - Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO. REV.

DST-XV-F8703 0

## Ball Valve

SHEET 1 OF 1

NO. DATE REVISION BY CHK'D PROC. APPR.

0 2022-05-18 Issued for Construction JP RC *RA* *RA*

Project: 21-0107-015

TAG NO: XV-F8703 Serial No: Loop Wiring Diagrams: 1-0101-AILD-F205-001

Asset No: P&amp;ID: 1-0101-PPID-F004-001 Line ID: Size: 80mm Schedule: 80

Description: MOTORIZED BALL VALVE Manufacturer: ROTORK

Purchase Order: Vendor: Rotork Controls Canada Ltd.

Requisition Number: Job Number:

Fluid: Ferric Chloride  
Fluid State: Liquid

PROCESS CONDITIONS	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
	Flow:	3.0	5.4	7.0	L/s
	Pressure:	60	60	60	psig
	Temperature:	0	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

Valve Type:	Ball Valve	Maximum Pressure:	150	psig
Body Size:	80mm	Inlet Connection Face:	Flanged	
Body Material:	PVC	Flange Face Finish:	Flat Face	
Bonnet Style:	N/A	Lubrication & Isolation:		
ANSI Class:	150	Packing Material:	EPDM or Viton	
Ball Material:	PVC	Packing Style:		

Manufacturer:	Chemline	Shaft Material:	PVC
Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
Size:	80mm	Seal Material:	EPDM or Viton
Rated Cv:	410	Ball Material:	PVC
Characteristic:		Leakage Class:	
Trim Type:			

Actuator Description:	Motorized Valve	Size:	125
Manufacturer:	ROTORK	Mounting Position:	
Model:	IQT Series	Actuator Orientation:	Parallel
Direction:		Stroke Time Open:	s
Fail Position:	Fail Last Position	Stroke Time Close:	s
Operating Sig:		Torque/Thrust	125 Nm
Electrical Operation	Voltage:	120 V 1 Ph	Min Max Units
	FLA:		N/A N/A Psig
	LRA:		N/A Psig

Stainless Steel Tag:	XV-F8703	Handwheel:	Yes
Positioner:	No	Limit Switch Closed:	Yes
Air Set:	No	Limit Switch Open:	Yes
Gauges:	No	Solenoid Valve:	No
Bypass:	No	Electrical Classification:	Note 2
Pilot Light:	No	Backup Power:	No
Marshalling Box:	No		

- NOTES
- Vendor to fill in or provide relevant information in empty field.
  - NEMA 4X, non-hazardous area.
  - Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO. REV.

DST-XV-F8704 0

## Ball Valve

SHEET 1 OF 1

NO. DATE REVISION BY CHK'D PROC. APPR.

0 2022-05-18 Issued for Construction JP RC *RA* *RA*

Project: 21-0107-015

TAG NO: XV-F8704 Serial No: Loop Wiring Diagrams: 1-0101-AILD-F206-001

Asset No: P&amp;ID: 1-0101-PPID-F004-001 Line ID: Size: 80mm Schedule: 80

Description: MOTORIZED BALL VALVE Manufacturer: ROTORK

Purchase Order: Vendor: Rotork Controls Canada Ltd.

Requisition Number: Job Number:

Fluid: Ferric Chloride  
Fluid State: Liquid

	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:	3.0	5.4	7.0	L/s
Pressure:	60	60	60	psig
Temperature:	0	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

Valve Type:	Ball Valve	Maximum Pressure:	150	psig
Body Size:	80mm	Inlet Connection Face:	Flanged	
Body Material:	PVC	Flange Face Finish:	Flat Face	
Bonnet Style:	N/A	Lubrication & Isolation:		
ANSI Class:	150	Packing Material:	EPDM or Viton	
Ball Material:	PVC	Packing Style:		

Manufacturer:	Chemline	Shaft Material:	PVC
Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
Size:	80mm	Seal Material:	EPDM or Viton
Rated Cv:	410	Ball Material:	PVC
Characteristic:		Leakage Class:	
Trim Type:			

Actuator Description:	Motorized Valve	Size:	125
Manufacturer:	ROTORK	Mounting Position:	
Model:	IQT Series	Actuator Orientation:	Parallel
Direction:		Stroke Time Open:	s
Fail Position:	Fail Last Position	Stroke Time Close:	s
Operating Sig:		Torque/Thrust	125 Nm
Electrical Operation	Voltage:	120 V 1 Ph	Min Max Units
	FLA:	A	N/A N/A Psig
	LRA:	A	Bench Range: N/A Psig

Stainless Steel Tag:	XV-F8704	Handwheel:	Yes
Positioner:	No	Limit Switch Closed:	Yes
Air Set:	No	Limit Switch Open:	Yes
Gauges:	No	Solenoid Valve:	No
Bypass:	No	Electrical Classification:	Note 2
Pilot Light:	No	Backup Power:	No
Marshalling Box:	No		

- NOTES
- Vendor to fill in or provide relevant information in empty field.
  - NEMA 4X, non-hazardous area.
  - Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO. **DST-XV-F8705**REV. **0**

## Ball Valve

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-05-18	Issued for Construction	JP	RC	<i>RC</i>	<i>RC</i>

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>XV-F8705</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F207-001
Asset No:		Spec No:		Line / Vessel Number:	80-FC-PV04-0705
Description:	MOTORIZED BALL VALVE			Manufacturer:	ROTORK
Purchase Order:		P&ID:	1-0101-PPID-F004-001	Model:	IQT Series
Requisition Number:		Vendor:			Rotork Controls Canada Ltd.
		Job Number:			

Fluid:	Ferric Chloride				
Fluid State:	Liquid				
<b>PROCESS CONDITIONS</b>		Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
	Flow:	3.0	5.4	7.0	L/s
	Pressure:	60	60	60	psig
	Temperature:	0	20	30	°C
	Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
	Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
	Lower SG / Density:	1.39		Lower Viscosity:	N/A
	Higher SG / Density:	1.46		Higher Viscosity:	N/A
	Pipe Rating:	Class 150		Ambient Temperature:	20 °C
	Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A				

<b>VALVE BODY</b>	Valve Type:	Ball Valve	Maximum Pressure:	150	psig
	Body Size:	80mm	Inlet Connection Face:	Flanged	
	Body Material:	PVC	Flange Face Finish:	Flat Face	
	Bonnet Style:	N/A	Lubrication & Isolation:		
	ANSI Class:	150	Packing Material:	EPDM or Viton	
	Ball Material:	PVC	Packing Style:		

<b>TRIM</b>	Manufacturer:	Chemline	Shaft Material:	PVC
	Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
	Size:	80mm	Seal Material:	EPDM or Viton
	Rated Cv:	410	Ball Material:	PVC
	Characteristic:		Leakage Class:	
	Trim Type:			

<b>ACTUATOR</b>	Actuator Description:	Motorized Valve	Size:	125			
	Manufacturer:	ROTORK	Mounting Position:				
	Model:	IQT Series	Actuator Orientation:	Parallel			
	Direction:		Stroke Time Open:				
	Fail Position:	Fail Last Position	Stroke Time Close:				
	Operating Sig:		Torque/Thrust	125 Nm			
	Electrical Operation	Voltage:	120 V 1 Ph	Pneumatic Operation	Min	Max	Units
		FLA:			N/A	N/A	Psig
LRA:			Bench Range:		N/A	Psig	

<b>OPTIONS</b>	Stainless Steel Tag:	XV-F8705	Handwheel:	Yes
	Positioner:	No	Limit Switch Closed:	Yes
	Air Set:	No	Limit Switch Open:	Yes
	Gauges:	No	Solenoid Valve:	No
	Bypass:	No	Electrical Classification:	Note 2
	Pilot Light:	No	Backup Power:	No
	Marshalling Box:	No		

<b>NOTES</b>	1. Vendor to fill in or provide relevant information in empty field.
	2. NEMA 4X, non-hazardous area.
	3. Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO. REV.

DST-XV-F8706 0

## Ball Valve

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-05-18	Issued for Construction	JP	RC	<i>RA</i>	<i>RA</i>

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>XV-F8706</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F208-001			
		Spec No:		Line / Vessel Number:	50-FC-PV04-0716			
Asset No:		P&ID:	1-0101-PPID-F007-001	Line ID:	Size:	50mm	Schedule:	80
Description:	MOTORIZED BALL VALVE			Manufacturer:	ROTORK			
				Model:	ROMpak			
Purchase Order:		Vendor:	Rotork Controls Canada Ltd.					
Requisition Number:		Job Number:						

Fluid:	Ferric Chloride				
Fluid State:	Liquid				
<b>PROCESS CONDITIONS</b>		Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
	Flow:	8	167	792	L/hr
	Pressure:	60	60	60	psig
	Temperature:	0	20	30	°C
	Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
	Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
	Lower SG / Density:	1.39		Lower Viscosity:	N/A
	Higher SG / Density:	1.46		Higher Viscosity:	N/A
	Pipe Rating:	Class 150		Ambient Temperature:	20 °C
	Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A				

<b>VALVE BODY</b>	Valve Type:	Ball Valve	Maximum Pressure:	230	psig
	Body Size:	50mm	Inlet Connection Face:	Female Threaded	
	Body Material:	PVC	Flange Face Finish:	N/A	
	Bonnet Style:	N/A	Lubrication & Isolation:		
	ANSI Class:	150	Packing Material:	EPDM or Viton	
	Ball Material:	PVC	Packing Style:		

<b>TRIM</b>	Manufacturer:	Chemline	Shaft Material:	PVC
	Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
	Size:	50mm	Seal Material:	EPDM or Viton
	Rated Cv:	190	Ball Material:	PVC
	Characteristic:		Leakage Class:	
	Trim Type:			

<b>ACTUATOR</b>	Actuator Description:	Motorized Valve	Size:	50			
	Manufacturer:	ROTORK	Mounting Position:				
	Model:	ROMpak-2	Actuator Orientation:	Parallel			
	Direction:		Stroke Time Open:	s			
	Fail Position:	Fail Last Position	Stroke Time Close:	s			
	Operating Sig:		Torque/Thrust	50 Nm			
	Electrical Operation	Voltage:	120 V 1 Ph	Pneumatic Operation	Min	Max	Units
		FLA:			N/A	N/A	Psig
		LRA:			Bench Range: N/A		Psig

<b>OPTIONS</b>	Stainless Steel Tag:	XV-F8706	Handwheel:	Yes
	Positioner:	No	Limit Switch Closed:	Yes
	Air Set:	No	Limit Switch Open:	Yes
	Gauges:	No	Solenoid Valve:	No
	Bypass:	No	Electrical Classification:	Note 2
	Pilot Light:	No	Backup Power:	No
	Marshalling Box:	No		

<b>NOTES</b>	1. Vendor to fill in or provide relevant information in empty field.
	2. NEMA 4X, non-hazardous area.
	3. Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO.

REV.

DST-XV-F8707

0

## Ball Valve

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-05-18	Issued for Construction	JP	RC	<i>RA</i>	<i>RA</i>

Project: 21-0107-015

Tag No:	XV-F8707	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F209-001
Asset No:		Spec No:		Line / Vessel Number:	50-FC-PV04-0717
Description:	MOTORIZED BALL VALVE			Manufacturer:	ROTORK
Purchase Order:		P&ID:	1-0101-PPID-F007-001	Model:	ROMpak
Requisition Number:		Vendor:			Rotork Controls Canada Ltd.
		Job Number:			

Fluid:	Ferric Chloride				
Fluid State:	Liquid				
PROCESS CONDITIONS	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
	Flow:	8	167	792	L/hr
	Pressure:	60	60	60	psig
	Temperature:	0	20	30	°C
	Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
	Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
	Lower SG / Density:	1.39	Lower Viscosity:	N/A	
	Higher SG / Density:	1.46	Higher Viscosity:	N/A	
	Pipe Rating:	Class 150	Ambient Temperature:	20	°C
	Pipe Material:	PVC	Area Classification:	Non Hazardous, Corrosive	
Special Condition:	N/A				

VALVE BODY	Valve Type:	Ball Valve	Maximum Pressure:	230	psig
	Body Size:	50mm	Inlet Connection Face:	Female Threaded	
	Body Material:	PVC	Flange Face Finish:	N/A	
	Bonnet Style:	N/A	Lubrication & Isolation:		
	ANSI Class:	150	Packing Material:	EPDM or Viton	
	Ball Material:	PVC	Packing Style:		

TRIM	Manufacturer:	Chemline	Shaft Material:	PVC
	Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
	Size:	50mm	Seal Material:	EPDM or Viton
	Rated Cv:	190	Ball Material:	PVC
	Characteristic:		Leakage Class:	
	Trim Type:			

ACTUATOR	Actuator Description:	Motorized Valve	Size:	50							
	Manufacturer:	ROTORK	Mounting Position:								
	Model:	ROMpak-2	Actuator Orientation:	Parallel							
	Direction:		Stroke Time Open:		s						
	Fail Position:	Fail Last Position	Stroke Time Close:		s						
	Operating Sig:		Torque/Thrust	50	Nm						
	Electrical Operation	Voltage:	120	V	1	Ph	Pneumatic Operation	Air Supply Pressure:	Min	Max	Units
		FLA:				A		N/A	N/A	Psig	
		LRA:				A		Bench Range:	N/A	Psig	

OPTIONS	Stainless Steel Tag:	XV-F8707	Handwheel:	Yes
	Positioner:	No	Limit Switch Closed:	Yes
	Air Set:	No	Limit Switch Open:	Yes
	Gauges:	No	Solenoid Valve:	No
	Bypass:	No	Electrical Classification:	Note 2
	Pilot Light:	No	Backup Power:	No
	Marshalling Box:	No		

NOTES	1. Vendor to fill in or provide relevant information in empty field.
	2. NEMA 4X, non-hazardous area.
	3. Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO. REV.

DST-XV-F8710 0

## Ball Valve

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-05-18	Issued for Construction	JP	RC	<i>RA</i>	<i>RA</i>

**Project:** 21-0107-015

<b>TAG NO:</b>	<b>XV-F8710</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F202-001			
		Spec No:		Line / Vessel Number:	25-FC-PV04-0734			
Asset No:		P&ID:	1-0101-PPID-F003-001	Line ID:	Size:	25mm	Schedule:	80
Description:	MOTORIZED BALL VALVE			Manufacturer:	ROTORK			
				Model:	ROMpak			
Purchase Order:		Vendor:	Rotork Controls Canada Ltd.					
Requisition Number:		Job Number:						

Fluid:	Ferric Chloride							
Fluid State:	Liquid							
<b>PROCESS CONDITIONS</b>		Minimum:	Normal (Operating):			Maximum (Full Scale):		Units:
	Flow:	90	1500			1700		L/hr
	Pressure:	60	60			60		psig
	Temperature:	0	20			30		°C
	Design Pressure:	150	psig	Vapour Pressure Pv:	N/A			
	Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A			
	Lower SG / Density:	1.39		Lower Viscosity:	N/A			
	Higher SG / Density:	1.46		Higher Viscosity:	N/A			
	Pipe Rating:	Class 150		Ambient Temperature:	20		°C	
	Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive			
Special Condition:	N/A							

<b>VALVE BODY</b>	Valve Type:	Ball Valve		Maximum Pressure:	230	psig
	Body Size:	25mm		Inlet Connection Face:	Female Threaded	
	Body Material:	PVC		Flange Face Finish:	N/A	
	Bonnet Style:	N/A		Lubrication & Isolation:		
	ANSI Class:	150		Packing Material:	EPDM or Viton	
	Ball Material:	PVC		Packing Style:		

<b>TRIM</b>	Manufacturer:	Chemline		Shaft Material:	PVC	
	Model:	Type 21 True Union Ball Valve		Stem Material:	PVC	
	Size:	25mm		Seal Material:	EPDM or Viton	
	Rated Cv:	47		Ball Material:	PVC	
	Characteristic:			Leakage Class:		
	Trim Type:					

<b>ACTUATOR</b>	Actuator Description:	Motorized Valve			Size:	50		
	Manufacturer:	ROTORK			Mounting Position:			
	Model:	ROMpak-2			Actuator Orientation:	Parallel		
	Direction:				Stroke Time Open:		s	
	Fail Position:	Fail Last Position			Stroke Time Close:		s	
	Operating Sig:				Torque/Thrust	50	Nm	
	Electrical Operation	Voltage:	120	V	1	Ph		Units
		FLA:				A		Psig
LRA:					A		Psig	
				Pneumatic Operation	Air Supply Pressure:	Min: N/A, Max: N/A	Psig	
					Bench Range:	N/A		

<b>OPTIONS</b>	Stainless Steel Tag:	XV-F8710	Handwheel:	Yes
	Positioner:	No	Limit Switch Closed:	Yes
	Air Set:	No	Limit Switch Open:	Yes
	Gauges:	No	Solenoid Valve:	No
	Bypass:	No	Electrical Classification:	Note 2
	Pilot Light:	No	Backup Power:	No
	Marshalling Box:	No		

<b>NOTES</b>	1. Vendor to fill in or provide relevant information in empty field.
	2. NEMA 4X, non-hazardous area.
	3. Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.





# Control Valve

DATA SHEET NO.

REV.

DST-XV-F8711

0

## Ball Valve

SHEET 1 OF 1

NO. DATE REVISION BY CHK'D PROC. APPR.

0 2022-05-18 Issued for Construction JP RC *RA* *RA*

Project: 21-0107-015

TAG NO: XV-F8711 Serial No: Loop Wiring Diagrams: 1-0101-AILD-F203-001

Asset No: P&amp;ID: 1-0101-PPID-F003-001 Line ID: Size: 25mm Schedule: 80

Description: MOTORIZED BALL VALVE Manufacturer: ROTORK

Purchase Order: Vendor: Rotork Controls Canada Ltd.

Requisition Number: Job Number:

Fluid: Ferric Chloride  
Fluid State: Liquid

PROCESS CONDITIONS	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
	Flow:	90	1500	1700	L/hr
	Pressure:	60	60	60	psig
	Temperature:	0	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

Valve Type:	Ball Valve	Maximum Pressure:	230	psig
Body Size:	25mm	Inlet Connection Face:	Female Threaded	
Body Material:	PVC	Flange Face Finish:	N/A	
Bonnet Style:	N/A	Lubrication & Isolation:		
ANSI Class:	150	Packing Material:	EPDM or Viton	
Ball Material:	PVC	Packing Style:		

Manufacturer:	Chemline	Shaft Material:	PVC
Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
Size:	25mm	Seal Material:	EPDM or Viton
Rated Cv:	47	Ball Material:	PVC
Characteristic:		Leakage Class:	
Trim Type:			

Actuator Description:	Motorized Valve	Size:	50				
Manufacturer:	ROTORK	Mounting Position:					
Model:	ROMpak-2	Actuator Orientation:	Parallel				
Direction:		Stroke Time Open:	s				
Fail Position:	Fail Last Position	Stroke Time Close:	s				
Operating Sig:		Torque/Thrust	50 Nm				
Electrical Operation	Voltage:	120 V 1 Ph	Pneumatic Operation	Min	Max	Units	
	FLA:			A	N/A	N/A	Psig
	LRA:			A	Bench Range: N/A		Psig

Stainless Steel Tag:	XV-F8711	Handwheel:	Yes
Positioner:	No	Limit Switch Closed:	Yes
Air Set:	No	Limit Switch Open:	Yes
Gauges:	No	Solenoid Valve:	No
Bypass:	No	Electrical Classification:	Note 2
Pilot Light:	No	Backup Power:	No
Marshalling Box:	No		

- NOTES
- Vendor to fill in or provide relevant information in empty field.
  - NEMA 4X, non-hazardous area.
  - Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO.

REV.

DST-XV-F8717

0

## Ball Valve

SHEET 1 OF 1

NO. DATE REVISION BY CHK'D PROC. APPR.

0 2022-05-18 Issued for Construction JP RC *RA* *RA*

Project: 21-0107-015

TAG NO: XV-F8717 Serial No: Loop Wiring Diagrams: 1-0101-AILD-F210-001

Asset No: P&amp;ID: 1-0101-PPID-F004-001 Line ID: Size: 80mm Schedule: 80

Description: MOTORIZED BALL VALVE Manufacturer: ROTORK

Purchase Order: Vendor: Rotork Controls Canada Ltd.

Requisition Number: Job Number:

Fluid: Ferric Chloride  
Fluid State: Liquid

	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:	3.0	5.4	7.0	L/s
Pressure:	60	60	60	psig
Temperature:	0	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

Valve Type:	Ball Valve	Maximum Pressure:	150	psig
Body Size:	80mm	Inlet Connection Face:	Flanged	
Body Material:	PVC	Flange Face Finish:	Flat Face	
Bonnet Style:	N/A	Lubrication & Isolation:		
ANSI Class:	150	Packing Material:	EPDM or Viton	
Ball Material:	PVC	Packing Style:		

Manufacturer:	Chemline	Shaft Material:	PVC
Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
Size:	80mm	Seal Material:	EPDM or Viton
Rated Cv:	410	Ball Material:	PVC
Characteristic:		Leakage Class:	
Trim Type:			

Actuator Description:	Motorized Valve	Size:	125
Manufacturer:	ROTORK	Mounting Position:	
Model:	IQT Series	Actuator Orientation:	Parallel
Direction:		Stroke Time Open:	s
Fail Position:	Fail Last Position	Stroke Time Close:	s
Operating Sig:		Torque/Thrust	125 Nm
Electrical Operation	Voltage:	120 V 1 Ph	Min Max Units
	FLA:	A	N/A N/A Psig
	LRA:	A	Bench Range: N/A Psig

Stainless Steel Tag:	XV-F8717	Handwheel:	Yes
Positioner:	No	Limit Switch Closed:	Yes
Air Set:	No	Limit Switch Open:	Yes
Gauges:	No	Solenoid Valve:	No
Bypass:	No	Electrical Classification:	Note 2
Pilot Light:	No	Backup Power:	No
Marshalling Box:	No		

- NOTES
- Vendor to fill in or provide relevant information in empty field.
  - NEMA 4X, non-hazardous area.
  - Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO.

REV.

DST-XV-F8800

0

## Ball Valve

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-05-18	Issued for Construction	JP	RC	<i>RA</i>	<i>RA</i>

Project: 21-0107-015

TAG NO:	XV-F8800	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F237-001
Asset No:		Spec No:		Line / Vessel Number:	80-SHD-PV04-0803
Description:	MOTORIZED BALL VALVE			Manufacturer:	ROTORK
		P&ID:	1-0101-PPID-F005-001	Model:	IQT Series
Purchase Order:		Vendor:		Rotork Controls Canada Ltd.	
Requisition Number:		Job Number:			

Fluid:	Sodium Hydroxide				
Fluid State:	Liquid				
PROCESS CONDITIONS	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
	Flow:	3.0	5.4	7.0	L/s
	Pressure:	60	60	60	Psig
	Temperature:	15	20	30	°C
	Design Pressure:	150	Psig	Vapour Pressure Pv:	N/A
	Design Temperature:	10 to 50	°C	Compressibility (Z):	N/A
	Lower SG / Density:	N/A	Lower Viscosity:	N/A	
	Higher SG / Density:	1.53	Higher Viscosity:	36	cP
	Pipe Rating:	N/A	Ambient Temperature:	20	°C
	Pipe Material:	PVC	Area Classification:	Non Hazardous, Corrosive	
Special Condition:	N/A				

VALVE BODY	Valve Type:	Ball Valve	Maximum Pressure:	150	psig
	Body Size:	80mm	Inlet Connection Face:	Flanged	
	Body Material:	PVC	Flange Face Finish:	Flat Face	
	Bonnet Style:	N/A	Lubrication & Isolation:		
	ANSI Class:	150	Packing Material:	EPDM or Viton	
	Ball Material:	PVC	Packing Style:		

TRIM	Manufacturer:	Chemline	Shaft Material:	PVC
	Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
	Size:	80mm	Seal Material:	EPDM or Viton
	Rated Cv:	410	Ball Material:	PVC
	Characteristic:		Leakage Class:	
	Trim Type:			

ACTUATOR	Actuator Description:	Motorized Valve	Size:	125		
	Manufacturer:	ROTORK	Mounting Position:			
	Model:	IQT Series	Actuator Orientation:	Parallel		
	Direction:		Stroke Time Open:	s		
	Fail Position:	Fail Last Position	Stroke Time Close:	s		
	Operating Sig:		Torque/Thrust	125 Nm		
	Electrical Operation	Voltage:	120 V 1 Ph	Pneumatic Operation	Air Supply Pressure:	Min Max Units
		FLA:	A		N/A N/A	Psig
		LRA:	A		Bench Range:	N/A

OPTIONS	Stainless Steel Tag:	XV-W8800	Handwheel:	Yes
	Positioner:	No	Limit Switch Closed:	Yes
	Air Set:	No	Limit Switch Open:	Yes
	Gauges:	No	Solenoid Valve:	No
	Bypass:	No	Electrical Classification:	Note 2
	Pilot Light:	No	Backup Power:	No
	Marshalling Box:	No		

NOTES	1. Vendor to fill in or provide relevant information in empty field.
	2. NEMA 4X, non-hazardous area.
	3. Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO.

REV.

DST-XV-F8801

0

## Ball Valve

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-05-18	Issued for Construction	JP	RC	<i>RA</i>	<i>RA</i>

Project: 21-0107-015

TAG NO:	XV-F8801	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F238-001
Asset No:		Spec No:		Line / Vessel Number:	80-SHD-PV04-0804
Description:	MOTORIZED BALL VALVE			Manufacturer:	ROTORK
		P&ID:	1-0101-PPID-F005-001	Model:	IQT Series
Purchase Order:		Vendor:		Rotork Controls Canada Ltd.	
Requisition Number:		Job Number:			

Fluid:	Sodium Hydroxide				
Fluid State:	Liquid				
PROCESS CONDITIONS	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:	
	Flow:	3.0	5.4	7.0	L/s
	Pressure:	60	60	60	Psig
	Temperature:	15	20	30	°C
	Design Pressure:	150	Psig	Vapour Pressure Pv:	N/A
	Design Temperature:	10 to 50	°C	Compressibility (Z):	N/A
	Lower SG / Density:	N/A	Lower Viscosity:	N/A	
	Higher SG / Density:	1.53	Higher Viscosity:	36	cP
	Pipe Rating:	N/A	Ambient Temperature:	20	°C
	Pipe Material:	PVC	Area Classification:	Non Hazardous, Corrosive	
Special Condition:	N/A				

VALVE BODY	Valve Type:	Ball Valve	Maximum Pressure:	150	psig
	Body Size:	80mm	Inlet Connection Face:	Flanged	
	Body Material:	PVC	Flange Face Finish:	Flat Face	
	Bonnet Style:	N/A	Lubrication & Isolation:		
	ANSI Class:	150	Packing Material:	EPDM or Viton	
	Ball Material:	PVC	Packing Style:		

TRIM	Manufacturer:	Chemline	Shaft Material:	PVC
	Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
	Size:	80mm	Seal Material:	EPDM or Viton
	Rated Cv:	410	Ball Material:	PVC
	Characteristic:		Leakage Class:	
	Trim Type:			

ACTUATOR	Actuator Description:	Motorized Valve	Size:	125		
	Manufacturer:	ROTORK	Mounting Position:			
	Model:	IQT Series	Actuator Orientation:	Parallel		
	Direction:		Stroke Time Open:	s		
	Fail Position:	Fail Last Position	Stroke Time Close:	s		
	Operating Sig:		Torque/Thrust	125 Nm		
	Electrical Operation	Voltage:	120 V 1 Ph	Pneumatic Operation	Air Supply Pressure:	Min Max Units
		FLA:	A		N/A N/A	Psig
		LRA:	A		Bench Range:	N/A

OPTIONS	Stainless Steel Tag:	XV-W8801	Handwheel:	Yes
	Positioner:	No	Limit Switch Closed:	Yes
	Air Set:	No	Limit Switch Open:	Yes
	Gauges:	No	Solenoid Valve:	No
	Bypass:	No	Electrical Classification:	Note 2
	Pilot Light:	No	Backup Power:	No
	Marshalling Box:	No		

NOTES	1. Vendor to fill in or provide relevant information in empty field.
	2. NEMA 4X, non-hazardous area.
	3. Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO. REV.

DST-XV-F8802 0

## Ball Valve

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-05-18	Issued for Construction	JP	RC	<i>RA</i>	<i>RA</i>

**Project:**

<b>TAG NO:</b>	<b>XV-F8802</b>	Serial No:		Loop Wiring Diagrams:	
Asset No:		Spec No:		Line / Vessel Number:	50-SHD-PV04-0813
Description:	MOTORIZED BALL VALVE			Manufacturer:	ROTORK
Purchase Order:		P&ID:	1-0101-PPID-F008-001	Model:	ROMpak
Requisition Number:		Vendor:			Rotork Controls Canada Ltd.
		Job Number:			

Fluid:	Sodium Hydroxide				
Fluid State:	Liquid				
<b>PROCESS CONDITIONS</b>		Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
	Flow:	8	67	792	L/hr
	Pressure:	60	60	60	Psig
	Temperature:	15	20	30	°C
	Design Pressure:	150	Psig	Vapour Pressure Pv:	N/A
	Design Temperature:	10 to 50	°C	Compressibility (Z):	N/A
	Lower SG / Density:	N/A		Lower Viscosity:	N/A
	Higher SG / Density:	1.53		Higher Viscosity:	36
	Pipe Rating:	N/A		Ambient Temperature:	20
	Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A				

<b>VALVE BODY</b>	Valve Type:	Ball Valve	Maximum Pressure:	230	psig
	Body Size:	50mm	Inlet Connection Face:	Female Threaded	
	Body Material:	PVC	Flange Face Finish:	N/A	
	Bonnet Style:	N/A	Lubrication & Isolation:		
	ANSI Class:	150	Packing Material:	EPDM or Viton	
	Ball Material:	PVC	Packing Style:		

<b>TRIM</b>	Manufacturer:	Chemline	Shaft Material:	PVC
	Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
	Size:	50mm	Seal Material:	EPDM or Viton
	Rated Cv:	190	Ball Material:	PVC
	Characteristic:		Leakage Class:	
	Trim Type:			

<b>ACTUATOR</b>	Actuator Description:	Motorized Valve	Size:	50							
	Manufacturer:	ROTORK	Mounting Position:								
	Model:	ROMpak-2	Actuator Orientation:	Parallel							
	Direction:		Stroke Time Open:	s							
	Fail Position:	Fail Last Position	Stroke Time Close:	s							
	Operating Sig:		Torque/Thrust	50							
	Electrical Operation	Voltage:	120	V	1	Ph	Pneumatic Operation	Air Supply Pressure:	Min	Max	Units
		FLA:				A		N/A	N/A	Psig	
LRA:					A		Bench Range:	N/A	Psig		

<b>OPTIONS</b>	Stainless Steel Tag:	XV-F8802	Handwheel:	Yes
	Positioner:	No	Limit Switch Closed:	Yes
	Air Set:	No	Limit Switch Open:	Yes
	Gauges:	No	Solenoid Valve:	No
	Bypass:	No	Electrical Classification:	Note 2
	Pilot Light:	No	Backup Power:	No
	Marshalling Box:	No		

<b>NOTES</b>	1. Vendor to fill in or provide relevant information in empty field.
	2. NEMA 4X, non-hazardous area.
	3. Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO.

REV.

DST-XV-F8803

0

## Ball Valve

SHEET 1 OF 1

NO. DATE REVISION BY CHK'D PROC. APPR.

0 2022-07-14 Issued for Construction JP AF

**Project:****TAG NO:**

XV-F8803

Serial No:

Loop Wiring Diagrams:

Spec No:

Line / Vessel Number:

50-SHD-PV04-0814

Asset No:

P&amp;ID:

1-0101-PPID-F008-001

Line ID:

Size:

50mm

Schedule:

80

Description:

MOTORIZED BALL VALVE

Manufacturer:

ROTORK

Model:

ROMpak

Purchase Order:

Vendor:

Rotork Controls Canada Ltd.

Requisition Number:

Job Number:

**PROCESS CONDITIONS**

Fluid:	Sodium Hydroxide
Fluid State:	Liquid

	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:	8	67	792	L/hr
Pressure:	60	60	60	Psig
Temperature:	15	20	30	°C

Design Pressure:	150	Psig	Vapour Pressure Pv:	N/A
Design Temperature:	10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	N/A		Lower Viscosity:	N/A
Higher SG / Density:	1.53		Higher Viscosity:	36
Pipe Rating:	N/A		Ambient Temperature:	20
Pipe Material:	PVC		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

**VALVE BODY**

Valve Type:	Ball Valve	Maximum Pressure:	230	psig
Body Size:	50mm	Inlet Connection Face:	Female Threaded	
Body Material:	PVC	Flange Face Finish:	N/A	
Bonnet Style:	N/A	Lubrication & Isolation:		
ANSI Class:	150	Packing Material:	EPDM or Viton	
Ball Material:	PVC	Packing Style:		

**TRIM**

Manufacturer:	Chemline	Shaft Material:	PVC
Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
Size:	50mm	Seal Material:	EPDM or Viton
Rated Cv:	190	Ball Material:	PVC
Characteristic:		Leakage Class:	
Trim Type:			

**ACTUATOR**

Actuator Description:	Motorized Valve	Size:	50
Manufacturer:	ROTORK	Mounting Position:	
Model:	ROMpak-2	Actuator Orientation:	Parallel
Direction:		Stroke Time Open:	s
Fail Position:	Fail Last Position	Stroke Time Close:	s
Operating Sig:		Torque/Thrust	50 Nm
Electrical Operation	Voltage:	120 V 1 Ph	Min Max Units
	FLA:		N/A N/A Psig
	LRA:		N/A Psig
		Pneumatic Operation	Air Supply Pressure: Bench Range: N/A Psig

**OPTIONS**

Stainless Steel Tag:	XV-F8803	Handwheel:	Yes
Positioner:	No	Limit Switch Closed:	Yes
Air Set:	No	Limit Switch Open:	Yes
Gauges:	No	Solenoid Valve:	No
Bypass:	No	Electrical Classification:	Note 2
Pilot Light:	No	Backup Power:	No
Marshalling Box:	No		

**NOTES**

- Vendor to fill in or provide relevant information in empty field.
- NEMA 4X, non-hazardous area.
- Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO. REV.

DST-XV-F87090 0

## Ball Valve

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-05-18	Issued for Construction	JP	RC	<i>RC</i>	<i>RC</i>

Project:

<b>TAG NO:</b>	<b>XV-G87090</b>	Serial No:		Loop Wiring Diagrams:	
Asset No:		Spec No:		Line / Vessel Number:	25-FC-PD03-0750
Description:	MOTORIZED BALL VALVE			Manufacturer:	ROTORK
Purchase Order:		P&ID:	1-0101-PPID-G012-001	Model:	ROMpak
Requisition Number:		Vendor:			Rotork Controls Canada Ltd.
		Job Number:			

PROCESS CONDITIONS

Fluid:	Ferric Chloride			
Fluid State:	Liquid			
	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:	90	250	250	L/hr
Pressure:	60	60	60	psig
Temperature:	0	20	30	°C
Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	HDPE		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

VALVE BODY

Valve Type:	Ball Valve	Maximum Pressure:	230	psig
Body Size:	15mm	Inlet Connection Face:	Female Threaded	
Body Material:	PVC	Flange Face Finish:	N/A	
Bonnet Style:	N/A	Lubrication & Isolation:		
ANSI Class:	150	Packing Material:	EPDM or Viton	
Ball Material:	PVC	Packing Style:		

TRIM

Manufacturer:	Chemline	Shaft Material:	PVC
Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
Size:	15mm	Seal Material:	EPDM or Viton
Rated Cv:	14	Ball Material:	PVC
Characteristic:		Leakage Class:	
Trim Type:			

ACTUATOR

Actuator Description:	Motorized Valve	Size:	50
Manufacturer:	ROTORK	Mounting Position:	
Model:	ROMpak-2	Actuator Orientation:	Parallel
Direction:		Stroke Time Open:	s
Fail Position:	Fail Last Position	Stroke Time Close:	s
Operating Sig:		Torque/Thrust	50 Nm
Electrical Operation	Voltage:	120 V 1 Ph	Min Max Units
	FLA:		N/A N/A Psig
	LRA:		N/A Psig
		Pneumatic Operation	Bench Range: N/A

OPTIONS

Stainless Steel Tag:	XV-F87090	Handwheel:	Yes
Positioner:	Yes	Limit Switch Closed:	Yes
Air Set:	No	Limit Switch Open:	Yes
Gauges:	No	Solenoid Valve:	No
Bypass:	No	Electrical Classification:	Note 2
Pilot Light:	No	Backup Power:	No
Marshalling Box:	No		

NOTES

- Vendor to fill in or provide relevant information in empty field.
- NEMA 4X, non-hazardous area.
- Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO.

REV.

DST-XV-F87095

0

## Ball Valve

SHEET 1 OF 1

NO. DATE REVISION BY CHK'D PROC. APPR.

0 2022-05-18 Issued for Construction JP RC *RA* *RA***Project:****TAG NO:**

XV-G87095

Serial No:

Loop Wiring Diagrams:

Spec No:

Line / Vessel Number:

25-FC-PD03-0750

Asset No:

P&amp;ID:

1-0101-PPID-G012-001

Line ID:

Size:

15mm

Schedule:

DR11

Description:

MOTORIZED BALL VALVE

Manufacturer:

ROTORK

Model:

ROMpak

Purchase Order:

Vendor:

Rotork Controls Canada Ltd.

Requisition Number:

Job Number:

**PROCESS CONDITIONS**

Fluid:	Ferric Chloride
Fluid State:	Liquid

	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:	90	250	250	L/hr
Pressure:	60	60	60	psig
Temperature:	0	20	30	°C

Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	HDPE		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

**VALVE BODY**

Valve Type:	Ball Valve	Maximum Pressure:	230	psig
Body Size:	15mm	Inlet Connection Face:	Female Threaded	
Body Material:	PVC	Flange Face Finish:	N/A	
Bonnet Style:	N/A	Lubrication & Isolation:		
ANSI Class:	150	Packing Material:	EPDM or Viton	
Ball Material:	PVC	Packing Style:		

**TRIM**

Manufacturer:	Chemline	Shaft Material:	PVC
Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
Size:	15mm	Seal Material:	EPDM or Viton
Rated Cv:	14	Ball Material:	PVC
Characteristic:		Leakage Class:	
Trim Type:			

**ACTUATOR**

Actuator Description:	Motorized Valve	Size:	50
Manufacturer:	ROTORK	Mounting Position:	
Model:	ROMpak-2	Actuator Orientation:	Parallel
Direction:		Stroke Time Open:	s
Fail Position:	Fail Last Position	Stroke Time Close:	s
Operating Sig:		Torque/Thrust	50 Nm
Electrical Operation	Voltage:	120 V 1 Ph	Min Max Units
	FLA:		N/A N/A Psig
	LRA:		N/A Psig
		Pneumatic Operation	Bench Range: N/A Psig

**OPTIONS**

Stainless Steel Tag:	XV-F87095	Handwheel:	Yes
Positioner:	No	Limit Switch Closed:	Yes
Air Set:	No	Limit Switch Open:	Yes
Gauges:	No	Solenoid Valve:	No
Bypass:	No	Electrical Classification:	Note 2
Pilot Light:	No	Backup Power:	No
Marshalling Box:	No		

**NOTES**

- Vendor to fill in or provide relevant information in empty field.
- NEMA 4X, non-hazardous area.
- Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.





# Control Valve

DATA SHEET NO. REV.

DST-XV-F87150 0

## Ball Valve

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-05-18	Issued for Construction	JP	RC	<i>RA</i>	<i>RA</i>

Project:

<b>TAG NO:</b>	<b>XV-Y87150</b>	Serial No:		Loop Wiring Diagrams:	
Asset No:		Spec No:		Line / Vessel Number:	25-FC-PD03-0774
Description:	MOTORIZED BALL VALVE			Manufacturer:	ROTORK
Purchase Order:		P&ID:	1-0101-PPID-Y001-001	Model:	ROMpak
Requisition Number:		Vendor:			Rotork Controls Canada Ltd.
		Job Number:			

PROCESS CONDITIONS

Fluid:	Ferric Chloride			
Fluid State:	Liquid			
	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:	90	250	250	L/hr
Pressure:	60	60	60	psig
Temperature:	0	20	30	°C
Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	HDPE		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

VALVE BODY

Valve Type:	Ball Valve	Maximum Pressure:	230	psig
Body Size:	15mm	Inlet Connection Face:	Female Threaded	
Body Material:	PVC	Flange Face Finish:	N/A	
Bonnet Style:	N/A	Lubrication & Isolation:		
ANSI Class:	150	Packing Material:	EPDM or Viton	
Ball Material:	PVC	Packing Style:		

TRIM

Manufacturer:	Chemline	Shaft Material:	PVC
Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
Size:	15mm	Seal Material:	EPDM or Viton
Rated Cv:	14	Ball Material:	PVC
Characteristic:		Leakage Class:	
Trim Type:			

ACTUATOR

Actuator Description:	Motorized Valve	Size:	50
Manufacturer:	ROTORK	Mounting Position:	
Model:	ROMpak-2	Actuator Orientation:	Parallel
Direction:		Stroke Time Open:	s
Fail Position:	Fail Last Position	Stroke Time Close:	s
Operating Sig:		Torque/Thrust	50 Nm
Electrical Operation	Voltage:	120 V 1 Ph	Min Max Units
	FLA:		N/A N/A Psig
	LRA:		N/A Psig
		Pneumatic Operation	Bench Range: N/A Psig

OPTIONS

Stainless Steel Tag:	XV-F87150	Handwheel:	Yes
Positioner:	No	Limit Switch Closed:	Yes
Air Set:	No	Limit Switch Open:	Yes
Gauges:	No	Solenoid Valve:	No
Bypass:	No	Electrical Classification:	Note 2
Pilot Light:	No	Backup Power:	No
Marshalling Box:	No		

NOTES

- Vendor to fill in or provide relevant information in empty field.
- NEMA 4X, non-hazardous area.
- Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.



# Control Valve

DATA SHEET NO. REV.

DST-XV-F87155 0

## Ball Valve

SHEET 1 OF 1

NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
0	2022-05-18	Issued for Construction	JP	RC	<i>RA</i>	<i>RA</i>

Project:

<b>TAG NO:</b>	<b>XV-Y87155</b>	Serial No:		Loop Wiring Diagrams:	
Asset No:		Spec No:		Line / Vessel Number:	25-FC-PD03-0774
Description:	MOTORIZED BALL VALVE			Line ID:	
Purchase Order:		P&ID:	1-0101-PPID-Y001-001	Size:	15mm Schedule: DR11
Requisition Number:		Manufacturer:		Model:	ROTORK ROMpak
		Vendor:			Rotork Controls Canada Ltd.
		Job Number:			

PROCESS CONDITIONS

Fluid:	Ferric Chloride			
Fluid State:	Liquid			
	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
Flow:	90	250	250	L/hr
Pressure:	60	60	60	psig
Temperature:	0	20	30	°C
Design Pressure:	150	psig	Vapour Pressure Pv:	N/A
Design Temperature:	-10 to 50	°C	Compressibility (Z):	N/A
Lower SG / Density:	1.39		Lower Viscosity:	N/A
Higher SG / Density:	1.46		Higher Viscosity:	N/A
Pipe Rating:	Class 150		Ambient Temperature:	20 °C
Pipe Material:	HDPE		Area Classification:	Non Hazardous, Corrosive
Special Condition:	N/A			

VALVE BODY

Valve Type:	Ball Valve	Maximum Pressure:	230	psig
Body Size:	15mm	Inlet Connection Face:	Female Threaded	
Body Material:	PVC	Flange Face Finish:	N/A	
Bonnet Style:	N/A	Lubrication & Isolation:		
ANSI Class:	150	Packing Material:	EPDM or Viton	
Ball Material:	PVC	Packing Style:		

TRIM

Manufacturer:	Chemline	Shaft Material:	PVC
Model:	Type 21 True Union Ball Valve	Stem Material:	PVC
Size:	15mm	Seal Material:	EPDM or Viton
Rated Cv:	14	Ball Material:	PVC
Characteristic:		Leakage Class:	
Trim Type:			

ACTUATOR


Actuator Description:	Motorized Valve	Size:	50
Manufacturer:	ROTORK	Mounting Position:	
Model:	ROMpak-2	Actuator Orientation:	Parallel
Direction:		Stroke Time Open:	
Fail Position:	Fail Last Position	Stroke Time Close:	
Operating Sig:		Torque/Thrust	50 Nm
Electrical Operation	Voltage:	120 V 1 Ph	
	FLA:		
	LRA:		
		Pneumatic Operation	
		Air Supply Pressure:	Min: N/A Max: N/A Units: Psig
		Bench Range:	N/A Psig

OPTIONS

Stainless Steel Tag:	XV-F87155	Handwheel:	Yes
Positioner:	No	Limit Switch Closed:	Yes
Air Set:	No	Limit Switch Open:	Yes
Gauges:	No	Solenoid Valve:	No
Bypass:	No	Electrical Classification:	Note 2
Pilot Light:	No	Backup Power:	No
Marshalling Box:	No		

NOTES

- Vendor to fill in or provide relevant information in empty field.
- NEMA 4X, non-hazardous area.
- Manufacturer and models were standardized by the City via RFP 331-2014, no alternates or substitutes will be accepted.

	<b>Flowmeter Instrument</b> <b>Magnetic</b>			DATA SHEET NO.		REV.	
				DST-FIT-F07804		0	
	NO.	DATE	REVISION	BY	CHK'D	PROC.	APPR.
	0	2022-07-13	Issued for Addendum	NP	AF	<i>JMS</i>	<i>JMS</i>
<b>Project:</b>	<b>21-0107-015</b>						
<b>TAG NO:</b>	<b>FIT-F07804</b>	Serial No:	Loop Wiring Diagrams:		1-0101-AILD-F226-001		
		Spec No:	Line / Vessel Number:		25-FC-PV04-0732		
Asset No:		P&ID:	1-0101-PPID-F009-001	Line ID:	Size:	15mm   Schedule:	
Description:	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION			Manufacturer:	Siemens		
				Model:	Sitrans F M Mag 6000 & F M Mag 1100		
Purchase Order:		Vendor:	Trrans-West				
Requisition Number:		Job Number:					
PROCESS CONDITIONS	Fluid:	Ferric Chloride					
	Fluid State:	Liquid					
	Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:		
	Flow:	90	1500	1700	L/hr		
	Pressure:	80	80	80	psig		
	Temperature:	15	20	30	°C		
	Design Pressure:	80	psig	Vapor Pressure Pv:	N/A		
	Design Temperature:	15 to 30	°C	Viscosity:	N/A		
	Lower SG / Density:	1.39		Compressibility (Z):	N/A		
	Higher SG / Density:	1.46		Special Condition:	N/A		
Pipe Material:	PVC						
METER	Connection Size:		Mounting Orientation:				
	End Connection:		Mounting Kit:				
	End Connection Material:		Flange / Wafer Rating:	Note 2			
	Lining Material:	Note 2	Flange Type:	Note 2			
	Lining Protector:	Note 2	Flange Material:	Note 2			
	Electrode Type:	Note 2	Allow. Operating Velocity:		to		
	Electrode Material:	Note 2	Enclosure Class:	NEMA 4X			
	Grounding Rings:		Element Model Number:	Note 2			
TRANSMITTER	Stainless Steel Tag:	FIT-F07804		Wetted O-Ring Material:			
	Application:			Fill Fluid:			
	Type:			Elevation:			
	Enclosure Class:	NEMA 4X		Suppression:			
	Housing:	Fiberglass-Reinforced Polymide		Instrument Range:		to	
	Mounting:	Local		Calibration Range:		to	
	Signal / Protocol:	Profibus		Controller Display Range:		to	
	Power Supply:	24 VDC		Static Pressure Range:		to	
	Electrical Connection:	4x1/2" NPT		Allow. Oper Pressure:		to	
	Accuracy:	0.25%		Allow. Oper Temperature:		to	
	Response Time:			Maximum Static Pressure			
	Element Material:			Manufacturer:	Siemens		
				Model:	Sitran F M Mag Series 6000		
OPTIONS	Integral Meter:			Hydrostatic Testing:			
	Scale:			Mounting Brackets:			
NOTES	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.						
	2. Information to be provided by Vendor.						
	3. Complete with option Card Profibus PA Module.						



## Flowmeter Instrument

### Magnetic

DATA SHEET NO.			REV.		
DST-FIT-F07814			0		
SHEET	1	OF	1		
BY	CHK'D	PROC.	APPR.		
0	2022-07-13	Issued for Addendum		NP	AF <i>JMS</i>

<b>Project:</b>	<b>21-0107-015</b>				
<b>TAG NO:</b>	<b>FIT-F07814</b>	Serial No:		Loop Wiring Diagrams:	1-0101-AILD-F253-001
		Spec No:		Line / Vessel Number:	25-FC-PV04-0733
Asset No:		P&ID:	1-0101-PPID-F009-001	Line ID:	
				Size:	15mm   Schedule:
Description:	MAGNETIC FLOWMETER TRANSMITTER WITH LOCAL INDICATION			Manufacturer:	Siemens
				Model:	Sitrans F M Mag 6000 & F M Mag 1100
Purchase Order:		Vendor:	Trrans-West		
Requisition Number:		Job Number:			

PROCESS CONDITIONS	Fluid:	Ferric Chloride			
	Fluid State:	Liquid			
	Process Data Case (Flow):	Minimum:	Normal (Operating):	Maximum (Full Scale):	Units:
	Flow:	90	1500	1700	L/hr
	Pressure:	80	80	80	psig
	Temperature:	15	20	30	°C
	Design Pressure:	80	psig	Vapor Pressure Pv:	N/A
	Design Temperature:	15 to 30	°C	Viscosity:	N/A
	Lower SG / Density:	1.39		Compressibility (Z):	N/A
	Higher SG / Density:	1.46		Special Condition:	N/A
Pipe Material:	PVC				

METER	Connection Size:		Mounting Orientation:	
	End Connection:		Mounting Kit:	
	End Connection Material:		Flange / Wafer Rating:	Note 2
	Lining Material:	Note 2	Flange Type:	Note 2
	Lining Protector:	Note 2	Flange Material:	Note 2
	Electrode Type:	Note 2	Allow. Operating Velocity:	
	Electrode Material:	Note 2	Enclosure Class:	NEMA 4X
	Grounding Rings:		Element Model Number:	Note 2

TRANSMITTER	Stainless Steel Tag:	FIT-F07804	Wetted O-Ring Material:	
	Application:		Fill Fluid:	
	Type:		Elevation:	
	Enclosure Class:	NEMA 4X	Suppression:	
	Housing:	Fiberglass-Reinforced Polyimide	Instrument Range:	
	Mounting:	Local	Calibration Range:	
	Signal / Protocol:	Profibus	Controller Display Range:	
	Power Supply:	24 VDC	Static Pressure Range:	
	Electrical Connection:	4x1/2" NPT	Allow. Oper Pressure:	
	Accuracy:	0.25%	Allow. Oper Temperature:	
	Response Time:		Maximum Static Pressure	
	Element Material:		Manufacturer:	Siemens
		Model:	Sitrans F M Mag Series 6000	

OPTIONS	Integral Meter:		Hydrostatic Testing:	
	Scale:		Mounting Brackets:	

NOTES	1. Manufacturer and models were standardized by the City via RFP 449-2014, no alternates or substitutes will be accepted.
	2. Information to be provided by Vendor.
	3. Complete with option Card Profibus PA Module.