APPENDIX F – COMMISSIONING FORMS

Winnipeg	**COMMISSIONING FORM** **AIR CONDITIONER**	Page 1 of 2 Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact		
	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Air Conditioner Location & Data					
	A/C Equipment No.		A/C Location: ☐ Ducted ☐ Ductless		Fed From:
	Drawings:	Single Line:	Mech. Schedule:		Schematic: ☐ N/A
	A/C Ratings:	Manufacturer:	Model:		Serial #:
		Power: kW Ton Size:	Rated Voltage: VAC	Full Load Amps: A	☐ 1-Phase ☐ 3-Phase

Visual Inspection / Cleaning				
	Air Conditioner Lamacoid Installed: ☐ Yes ☐ No		Visual Signs of Overheating: ☐ Yes ☐ No	
	Power Cables Labelled: ☐ Yes ☐ No		Appropriate Breaker / Fuse Size Installed: ☐ Yes ☐ No	
	Appropriate Duct / Ductless Installation: ☐ Yes ☐ No		Sufficient Ton Size Installed: ☐ Yes ☐ No	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor		A/C Unit Properly Installed: ☐ Good ☐ Acceptable ☐ Poor	
	Power Connection: ☐ Good ☐ Acceptable ☐ Poor		Ground Connection: ☐ Good ☐ Acceptable ☐ Poor	
	Fully Functional Controller: ☐ Good ☐ Acceptable ☐ Poor		Controller Display Works: ☐ Good ☐ Acceptable ☐ Poor	
	Remote Controller Installed: ☐ Yes ☐ No ☐ N/A		Remote Controller Cable Labelled: ☐ Yes ☐ No ☐ N/A	
	Cables Supported Appropriately: ☐ Yes ☐ No		Equipment Cleaned: ☐ Yes	Photograph Taken: ☐ Yes
	Comments:			

Air Conditioner Electrical Testing

Test Preparation: Setup: Source: ☐ Isolated Power Cable ☐ Disconnected ☐ Connected

Note: Approval of City's Representative is required, prior to leaving cables connected during the test.

WARNING: DISCONNECT ALL FIELD POWER CABLES PRIOR TO TEST.

Test	**Test Voltage**	**Insulation Resistance (MΩ)**			Ground all phases not under test!
		Phase A	**Phase B**	**Phase C**	
Contactor Line to Ground	VDC				
Contactor Load to Ground	VDC				**Test Summary**
Contactor Line to Load	VDC				☐ Test Passed
					☐ Test Inconclusive Further Investigation Required.
Test	**Tester**	**Resistance (μΩ)**			☐ Test Failed
		Phases A-B	**Phases B-C**	**Phases C-B**	
Heating Element	Fluke Meter				

Comments:

Winnipeg	**COMMISSIONING FORM** **AIR CONDITIONER**	Page 2 of 2 Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Full Load Operational Testing

TESTING: AIR CONDITIONER TO BE RUN FOR FIVE (5) MINUTES POINT PRIOR TO RECORDING VALUES.

Temperature	Turn On Setpoint: °C	Actual Turn On Setpoint: °C

A/C Loads	*Device*	*Measured Current*		
		Phase A	*Phase B*	*Phase C*
	Compressor ☐ N/A	A	A	A
	Fan ☐ N/A	A	A	A
	Heater ☐ N/A	A	A	A

Contactor	*Description*	*Controller Contact Status*	*Contactor Status*	*A/C Status*
	Contactor ☐ N/A	Closed Opened	☐ Closed ☐ Opened ☐ Closed ☐ Opened	☐ Running ☐ Stopped ☐ Running ☐ Stopped

Comments:

Final Analysis			Comments:
	Returned to Service:	☐ Yes ☐ No	
	Monitoring / Further Inspection Required:	☐ Yes ☐ No	
	Repair / Replacement Required:	☐ Yes ☐ No	

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **CUSTOMER SERVICE TERMINATION END**	Page 1 of 2 Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

CSTE Location & Data	CSTE Downstream Load:		Equipment No.		Location:
	Drawings:	Single Line:	Grounding:		Site Plan:
	CSTE:	Manufacturer:	Model:		Serial #:
		Mounting Type: ☐ Floor ☐ Wall	Metering Type: ☐ CTs & PTs w/ Meter ☐ Meter Only		Remote Enclosure: ☐ Yes ☐ No
		Rated Current: A	Rated Voltage: VAC	Phases: ☐ 1-Ph ☐ 3-Ph	Short-Circuit Rating kAIC
	Main Disconnect Type:	☐ Breaker ☐ Switch ☐ N/A	Rating: A	Inst. Setting: A	Manufacturer: Model:

Service Size & CSTE Cabling	Service Size: kVA	Voltage: VAC Phases: ☐ 1ø ☐ 3ø	Rated Service Current: A	Service Transformer: ☐ Pole ☐ Padmount
	CSTE Load Side Cabling Size and Type: (ie 2 x 4C, 350 kcmil Teck90)		CSTE Load Side Cabling: ☐ Bottom ☐ Side / Rear	CSTE Downstream Load:
	CSTE Load Side Cable Rating: Table A (CEC C22.1) Diagram: Detail:			CSTE Ground Cable Size & Type:

Visual Inspection / Cleaning	CSTE Lamacoid Installed: ☐ Yes ☐ No		Visual Signs of Overheating: ☐ Yes ☐ No	
	Power Cables Labelled at Both Ends: ☐ Yes ☐ No		Phases Labelled Inside Enclosure: ☐ Yes ☐ No	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor		Power Cable Connections: ☐ Good ☐ Acceptable ☐ Poor	
	Main Disconnect: ☐ Good ☐ Acceptable ☐ Poor		Service Entrance Enclosure: ☐ Good ☐ Acceptable ☐ Poor	
	Ground Connections: ☐ Good ☐ Acceptable ☐ Poor		Bus Bars and Insulators: ☐ Good ☐ Acceptable ☐ Poor	
	Door Mechanical: ☐ Good ☐ Acceptable ☐ Poor		Exercised Circuit Breaker / Disconnect: ☐ Yes ☐ No	
	Cables Supported Appropriately: ☐ Yes ☐ No		Equipment Cleaned: ☐ Yes	Photograph Taken: ☐ Yes
	Comments:			

Resistance Measurements	**Test**	**Resistance (μΩ)**			**Test Summary**
		Phase A	**Phase B**	**Phase C**	☐ Test Passed ☐ Test Inconclusive Further Investigation Required. ☐ Test Failed
	Interior Bus Bar / Cabling				
	Breaker / Disconnect				
	Comments:				

Winnipeg	**COMMISSIONING FORM** **CUSTOMER SERVICE TERMINATION END**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Insulation Resistance Test

Test Preparation:
Setup:
Source: ☐ Isolated
Contactor: ☐ Open

Cable Destination / Load:
☐ Disconnected
☐ Connected with Load Isolated

Note: Approval of City's Representative is required, prior to leaving cables connected during the test.

WARNING: DISCONNECT ALL POWER CABLES FROM VFD MODULE AND CAPACITORS, AND DISCONNECT ALL CONTROL POWER FUSES PRIOR TO TEST.

Test	**Voltage**	**Insulation Resistance (MΩ)**			Ground all phases not under test!
		Phase A	**Phase B**	**Phase C**	
Interior Bus Bar / Cabling to Ground	1000 VDC				**Test Summary** ☐ Test Passed ☐ Test Inconclusive Further Investigation Required. ☐ Test Failed
Main Disconnect Line to Ground	1000 VDC				
Main Disconnect Load to Ground	1000 VDC				
Main Disconnect Line to Load	1000 VDC				

Comments:

Breaker Settings

Adjust Settings to Match Single Line Diagram	Comments:
Settings Applied to Breaker: ☐ Yes ☐ No	
Single Line Diagram:	

Final Analysis

Returned to Service:	☐ Yes ☐ No	Comments:
Monitoring / Further Inspection Required:	☐ Yes ☐ No	
Repair / Replacement Required:	☐ Yes ☐ No	

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

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Winnipeg	**COMMISSIONING FORM DISCONNECT SWITCH**	Page 1 of 2 Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact		
	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Disconnect Location & Data					
	Disconnect Equipment No.		Location:		Fed From:
	Drawings:	Single Line:	Schematic:		Connection:
	Disconnect Ratings:	Manufacturer:	Model:		Serial #:
		Ampacity: A Withstand: kAIC	Rated Voltage: VAC	No. of Poles:	Auxiliary Contacts: ☐ Yes ☐ No
	Fuse Ratings:	☐ Installed ☐ N/A	Rating: A	Type:	Manufacturer: Model:

Visual Inspection / Cleaning				
	Disconnect Lamacoid Installed: ☐ Yes ☐ No		Visual Signs of Overheating: ☐ Yes ☐ No	
	Power Cables Labelled: ☐ Yes ☐ No		Any Exposed Energized Metal: ☐ Yes ☐ No	
	Rated for Hazardous Location: ☐ Yes ☐ No		All Fuse Sizes Match Drawings: ☐ Yes ☐ No	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor		Enclosure Cover Secured: ☐ Good ☐ Acceptable ☐ Poor	
	Switchblade Mechanical: ☐ Good ☐ Acceptable ☐ Poor		Ground Connection: ☐ Good ☐ Acceptable ☐ Poor	
	Exercised Switchblade Operation: ☐ Yes ☐ No ☐ N/A		Auxiliary Contacts Change State: ☐ Yes ☐ No	
	Cables Supported Appropriately: ☐ Yes ☐ No		Equipment Cleaned: ☐ Yes	Photograph Taken: ☐ Yes
	Comments:			

Switchblade & Fuse Measurements	**Test**	**Resistance (μΩ)**			**Test Summary**
		Phase A	**Phase B**	**Phase C**	☐ Test Passed ☐ Further Investigation Required. ☐ Test Failed
	Switchblade Pole Measurements				
	Fuse Measurements				
	Comments:				

Insulation Resistance Test						
	Test Preparation:	Source: ☐ Disconnected ☐ Connected with Source Isolated	Load: ☐ Disconnected ☐ Connected with Load Isolated	Note: Approval of City's Representative is required, prior to leaving cables connected during the test.		
	WARNING: Isolate Source and Load Cabling Prior To Test. Use 500 VDC for < 300 V rated and 1000 VDC for > 300 V rated.					
	Test	**Voltage**	**Insulation Resistance (MΩ)**			Ground all phases not under test!
			Phase A	**Phase B**	**Phase C**	
	Disconnect Line Side to Ground	VDC				**Test Summary** ☐ Test Passed ☐ Further Investigation Required. ☐ Test Failed
	Disconnect Load Side to Ground	VDC				
	Disconnect Line to Load	VDC				
	Comments:					

Winnipeg	**COMMISSIONING FORM DISCONNECT SWITCH**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Final Analysis				
	Returned to Service:	☐ Yes	☐ No	Comments:
	Monitoring / Further Inspection Required:	☐ Yes	☐ No	
	Repair / Replacement Required:	☐ Yes	☐ No	

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **DRY TYPE TRANSFORMER**	Page 1 of 2 Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Transformer Location & Data	Transformer Equipment No.			Location:				Single Line Dwg:		
	Transformer Ratings:	Manufacturer:		CAT / Model No.				Serial #:		
		Primary: V		Secondary Voltage: V		Rating: kVA		☐ 1-Phase ☐ 3-Phase		
		Primary Winding (3-Ph) ☐ Δ ☐ Y ☐ Y-Gnd		Secondary Winding (3-Ph) ☐ Δ ☐ Y ☐ Y-Gnd		Winding Material: ☐ Aluminum ☐ Copper		Impedance: %Z		Temp. Rise: °C
	Transformer Taps:	☐ Primary ☐ Secondary ☐ N/A	Tap Setting	1 V	2 V	3 V	4 V	5 V	6 V	Tap Setting On V

Visual Inspection / Cleaning	Transformer Lamacoid Installed: ☐ Yes ☐ No		Visual Signs of Overheating: ☐ Yes ☐ No	
	Power Cables Labelled: ☐ Yes ☐ No		Any Exposed Energized Metal: ☐ Yes ☐ No	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor		Enclosure Secured: ☐ Good ☐ Acceptable ☐ Poor	
	Power Connections: ☐ Good ☐ Acceptable ☐ Poor		Ground Connections: ☐ Good ☐ Acceptable ☐ Poor	
	Transformer Supported Appropriately: ☐ Yes ☐ No ☐ N/A		Neutral Bonded to Ground: ☐ Yes ☐ Yes ☐ N/A	
	Cables Supported Appropriately: ☐ Yes ☐ No		Equipment Cleaned: ☐ Yes	Photograph Taken: ☐ Yes
	Comments:			

Insulation Resistance Test	Test Preparation:	Source: ☐ Disconnected ☐ Connected with Source Isolated	Note: Approval of City's Representative is required, prior to leaving cables connected during the test.		
	WARNING: DISCONNECT INCOMING SOURCE POWER CABLES PRIOR TO TEST.				
	Winding	**Voltage**	**Insulation Resistance (MΩ)**		Resistance to be recorded after 60 sec.
			Phase A	**Phase B**	**Phase C**
	Primary to Ground	VDC				**Test Summary** ☐ Test Passed ☐ Further Investigation Required. ☐ Test Failed
	Secondary to Ground	VDC				
	Primary to Secondary	VDC				
	Comments:				

Final Analysis	Returned to Service: ☐ Yes ☐ No	Comments:	
	Monitoring / Further Inspection Required: ☐ Yes ☐ No		
	Repair / Replacement Required: ☐ Yes ☐ No		

Winnipeg	**COMMISSIONING FORM** **DRY TYPE TRANSFORMER**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **DUCT HEATER**	Page 1 of 2 Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Duct Heater Location & Data	Heater Equipment No.		Heater Location:		Fed From:	
	Drawings:	Single Line:	Mech. Schedule:		Schematic:	☐ N/A
	Duct Heater Ratings:	Manufacturer:	Model:		Serial #:	
		Power: kW	Rated Voltage: VAC	Full Load Amps: A	☐ 1-Phase	☐ 3-Phase
		Flow Rate: L/s	Control Voltage: VAC	Stages:	SCR Controls: to V	

Visual Inspection / Cleaning	Duct Heater Lamacoid Installed:	☐ Yes	☐ No	Visual Signs of Overheating:	☐ Yes	☐ No	
	Power Cables Labelled:	☐ Yes	☐ No	Appropriate Breaker / Fuse Size Installed:	☐ Yes	☐ No	
	SCR Control Cables Labelled:	☐ Yes	☐ No	SCR Controls Properly Installed:	☐ Yes	☐ No	
	Cleanliness:	☐ Good	☐ Acceptable ☐ Poor	Heater Properly Installed:	☐ Good	☐ Acceptable	☐ Poor
	Power Connection:	☐ Good	☐ Acceptable ☐ Poor	SCR Controls Connection:	☐ Good	☐ Acceptable	☐ Poor
	Ground Connection:	☐ Good	☐ Acceptable ☐ Poor	Ground Connection:	☐ Good	☐ Acceptable	☐ Poor
	Remote Thermostat Installed:	☐ Yes	☐ No ☐ N/A	Remote Thermostat Cable Labelled	☐ Yes	☐ No	☐ N/A
	Cables Supported Appropriately:	☐ Yes	☐ No	Equipment Cleaned: ☐ Yes	Photograph Taken:	☐ Yes	
	Comments:						

Heater Electrical Testing

Test Preparation: Setup: Source: ☐ Isolated Power Cable ☐ Disconnected ☐ Connected

Note: Approval of City's Representative is required, prior to leaving cables connected during the test.

WARNING: DISCONNECT ALL FIELD POWER CABLES FROM MOTOR PRIOR TO TEST.

Test	**Test Voltage**	**Insulation Resistance (MΩ)**			Ground all phases not under test!
		Phase A	**Phase B**	**Phase C**	
Line to Ground	VDC				**Test Summary** ☐ Test Passed ☐ Test Inconclusive Further Investigation Required. ☐ Test Failed

Test	**Tester**	**Resistance (μΩ)**		
		Phases A-B	**Phases B-C**	**Phases C-B**
Heating Element	Fluke Meter			

Comments:

Winnipeg	**COMMISSIONING FORM** **DUCT HEATER**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Operational Testing

TESTING: HEATER TO BE RUN FOR TWO (2) MINUTES UNDER EACH SCR DUTY POINT PRIOR TO RECORDING VALUES. SCR DUTY POINTS FOR 0 – 10 V WOULD BE TESTED AT 0.0 V, 2.5 V, 5.0 V, 7.5 V and 10.0 V.

Temperature		Turn On Setpoint: °C		Actual Turn On Setpoint: °C
SCR Duty Point	SCR Volts	Duct Heater Measured Current		
		Phase A	Phase B	Phase C
1	V	A	A	A
2	V	A	A	A
3	V	A	A	A
4	V	A	A	A
5	V	A	A	A

Comments:

Final Analysis

Returned to Service:	☐ Yes	☐ No	Comments:
Monitoring / Further Inspection Required:	☐ Yes	☐ No	
Repair / Replacement Required:	☐ Yes	☐ No	

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **EMERGENCY LIGHTING**	Page 1 of 2 Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Emergency Lighting Location & Data	Battery Bank Location:		Battery Bank Equipment No.	Panel Feed: Circuit No.	Control Panel No.	Applicable Drawings:
	Battery Bank:	Manufacturer:		Catalog No.		Serial #:
		Input Voltage: VAC	Output Voltage: VDC		Wattage: W	Internal Lamp Qty:
	Remote Fixtures:	Manufacturer:		Catalog No.		Remote Fixtures Qty:
		Input Voltage: VDC	Input Current: A		Lamp Wattage: W	Fixture Lamp Qty:
		Installed Locations:				

Visual Inspection / Cleaning	Identification Lamacoids Installed: ☐ Yes ☐ No		Lamps Properly Aimed: ☐ Yes ☐ No	
	Visual Signs of Moisture: ☐ Yes ☐ No		All Lamps Properly Operate: ☐ Yes ☐ No	
	Dry Well Remote Fixtures Moisture Proof Rated: ☐ Yes ☐ No ☐ N/A		Valve Chamber Remote Fixtures Moisture Proof Rated: ☐ Yes ☐ No ☐ N/A	
	Wet Well Remote Fixtures Explosion Proof Rated: ☐ Yes ☐ No ☐ N/A		Comminutor Chamber Remote Fixtures Explosion Proof Rated: ☐ Yes ☐ No ☐ N/A	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor		Cable Connections: ☐ Good ☐ Acceptable ☐ Poor	
	Ground Connections: ☐ Good ☐ Acceptable ☐ Poor		Connections Properly Sealed: ☐ Good ☐ Acceptable ☐ Poor	
	Cables Supported Appropriately: ☐ Yes ☐ No		Equipment Cleaned: ☐ Yes	Photograph Taken: ☐ Yes
	Comments:			

Battery Testing	Battery Bank Temperature Before Starting Testing: °C	Battery Bank Temperature After Testing Completed: °C	**Test Summary** ☐ Test Passed ☐ Test Inconclusive ☐ Further Investigation Required ☐ Test Failed
	Battery Voltage at Start of Testing: V		
	Battery Backup Design Time (from Drawing): minutes minimum		
	Time Until All Emergency Lights Turn Off: minutes		
	Measured Battery Bank Current Draw During Testing: A		
	Time to Fully Recharge Battery After Testing: minutes		
	Comments:		

Operational Testing	Emergency Lights Turn On and Off Automatically in Normal Mode: ☐ Yes ☐ No		Emergency Lights Turn On in Test Mode: ☐ Yes ☐ No	
	Operating Modes	*Mode Description*	*Emergency Lights On*	*Time For Emergency Lights to Turn On*
		Normal Mode – Normal Station Operation	No	N/A
		Normal Mode – Battery Bank Power Supply Failure	☐ Yes ☐ No	sec
		Normal Mode – Individual Normal Lighting Circuits Fail	☐ Yes ☐ No	sec
		Test Mode	☐ Yes ☐ No ☐ N/A	sec
	Comments:			

Winnipeg	**COMMISSIONING FORM** **EMERGENCY LIGHTING**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Final Analysis				
	Returned to Service:	☐ Yes	☐ No	Comments:
	Monitoring / Further Inspection Required:	☐ Yes	☐ No	
	Repair / Replacement Required:	☐ Yes	☐ No	

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **HVAC CONTROLLER**	Page 1 of 3 Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Controller Location & Data	HVAC Controller Location:			Equipment No.			HVAC Control Panel Equip. No. ☐ N/A	
	Drawings:	HVAC P&ID:		Control Panel:			Dampers Loop:	
	Controlled Dampers:	Supply Damper Equipment No. ☐ N/A		Return Damper Equipment No. ☐ N/A			Exhaust Damper Equipment No. ☐ N/A	
	Controlled Heaters:	Heater No. ☐ N/A		Heater No. ☐ N/A			Heater No. ☐ N/A	
	HVAC Controller:	Manufacturer:		Catalog No.			Serial #:	
		Power Rating:	Power Supply: VAC		Current Rating: A		Control Voltage: VAC	
	Control Power Transformer:	Size: VA	Secondary Voltage: V		Primary Fuse: A		Secondary Fuse: A	

Visual Inspection / Cleaning	HVAC Controller Lamacoid Installed: ☐ Yes ☐ No			Visual Signs of Overheating: ☐ Yes ☐ No		
	Power Cables Labelled at Both Ends: ☐ Yes ☐ No			Control Cables Labelled at Both Ends: ☐ Yes ☐ No		
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor			Power Cable Connections: ☐ Good ☐ Acceptable ☐ Poor		
	Fully Functioning Controller: ☐ Good ☐ Acceptable ☐ Poor			Controller Properly Mounted: ☐ Good ☐ Acceptable ☐ Poor		
	Controller Fully Programmed: ☐ Good ☐ Acceptable ☐ Poor			All Inputs & Outputs Work: ☐ Good ☐ Acceptable ☐ Poor		
	Cables Supported Appropriately: ☐ Yes ☐ No ☐ N/A			Equipment Cleaned: ☐ Yes	Photograph Taken: ☐ Yes	
	Comments:					

Operational Testing	Station Occupied Light Switch Activates High Ventilation Rate: ☐ Yes ☐ No ☐ N/A	Comments:		
	High Outdoor Temperature Activates High Ventilation Rate: ☐ Yes ☐ No ☐ N/A			
	High Gas Detection Activates High Ventilation Rate: ☐ Yes ☐ No ☐ N/A			
	Controller Changes From High Ventilation Rate to Low Ventilation Rate: ☐ Yes ☐ No ☐ N/A			
	Controller Defaults to Low Ventilation Rate: ☐ Yes ☐ No ☐ N/A			

Operating Modes	*Mode Description*	*Supply Damper Open (0 – 100%)*	*Return Damper Open (0 – 100%)*	*Exhaust Damper Open (0 – 100%)*
	High Ventilation Rate	% ☐ N/A	% ☐ N/A	% ☐ N/A
	Low Ventilation Rate	% ☐ N/A	% ☐ N/A	% ☐ N/A

Controller Settings	Program HVAC Controller Settings to Match Setting Letter.	Comments:
	Settings Applied to Controller: ☐ Yes ☐ No	
	HVAC Controller Setting Letter File:	

Winnipeg	**COMMISSIONING FORM HVAC CONTROLLER**	Page 2 of 3
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Controller Input / Output Signals

Verify Control Signals Between Controller and Field Devices

Test Preparation: Test physical signals rather than installing jumpers for signals

Field Wires Labelled at Both Ends: ☐ Yes ☐ No

Comments:

Discrete 1 Input

Signal Description	*State*	*State Description*	*Signal Appears on Controller Screen*	*Modulated 1 Output (0 – 100 %)*	*Modulated 2 Output (0 – 100 %)*
☐ Not Used	Low (0)		☐ Yes ☐ No ☐ N/A	% ☐ N/A	% ☐ N/A
	High (1)		☐ Yes ☐ No ☐ N/A	% ☐ N/A	% ☐ N/A

Sensor A Input

Signal Description	*Signal Type*	*Condition Pickup Level*	*Signal Appears on Controller Screen*	*Modulated 1 Output (0 – 100 %)*	*Modulated 2 Output (0 – 100 %)*
☐ Not Used	☐ RTD ☐ PT100 ☐ PT1000 ☐ 4-20 mA	☐ Low ≤ °C	☐ Yes ☐ No ☐ N/A	% ☐ N/A	% ☐ N/A
		☐ High > °C	☐ Yes ☐ No ☐ N/A	% ☐ N/A	% ☐ N/A

Sensor B Input

Signal Description	*Signal Type*	*Condition Pickup Level*	*Signal Appears on Controller Screen*	*Modulated 1 Output (0 – 100 %)*	*Modulated 2 Output (0 – 100 %)*
☐ Not Used	☐ RTD ☐ PT100 ☐ PT1000	☐ Low ≤ °C	☐ Yes ☐ No ☐ N/A	% ☐ N/A	% ☐ N/A
		☐ High > °C	☐ Yes ☐ No ☐ N/A	% ☐ N/A	% ☐ N/A

Relay 1 Output

Signal Description	*Output Goes To*	*Output Changes Based on Signal Input*	*Output State Level*	*State Description*	*Signal Appears on Controller Screen*
☐ Not Used		☐ Discrete Input 1 ☐ Sensor A ☐ Sensor B	Low (0)		☐ Yes ☐ No ☐ N/A
			High (1)		☐ Yes ☐ No ☐ N/A

Relay 2 Output

Signal Description	*Output Goes To*	*Output Changes Based on Signal Input*	*Output State Level*	*State Description*	*Signal Appears on Controller Screen*
☐ Not Used		☐ Discrete Input 1 ☐ Sensor A ☐ Sensor B	Low (0)		☐ Yes ☐ No ☐ N/A
			High (1)		☐ Yes ☐ No ☐ N/A

Modulated 1 Output

Output Goes to Field Devices	*Output Signal*	*Output Changes Based on Signal Input*	*Output State Level*	*Signal Appears on Controller Screen*	*Measured Output (V / mA)*
☐ Heater SCR ☐ Supply Damper ☐ Return Damper ☐ Exhaust Damper ☐ Not Used	☐ 0 – 5V ☐ 0 – 10V ☐ 4–20mA	☐ Discrete Input 1 ☐ Sensor A ☐ Sensor B	Low	☐ Yes ☐ No ☐ N/A	V / mA
			High	☐ Yes ☐ No ☐ N/A	V / mA

Modulated 2 Output

Output Goes to Field Devices	*Output Signal*	*Output Changes Based on Signal Input*	*Output State Level*	*Signal Appears on Controller Screen*	*Measured Output (V / mA)*
☐ Heater SCR ☐ Supply Damper ☐ Return Damper ☐ Exhaust Damper ☐ Not Used	☐ 0 – 5V ☐ 0 – 10V ☐ 4–20mA	☐ Discrete Input 1 ☐ Sensor A ☐ Sensor B	Low	☐ Yes ☐ No ☐ N/A	V / mA
			High	☐ Yes ☐ No ☐ N/A	V / mA

Winnipeg	**COMMISSIONING FORM HVAC CONTROLLER**	Page 3 of 3
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Final Analysis				
	Returned to Service:	☐ Yes	☐ No	Comments:
	Monitoring / Further Inspection Required:	☐ Yes	☐ No	
	Repair / Replacement Required:	☐ Yes	☐ No	

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **HVAC DAMPERS**	Page 1 of 3 Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact		
	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Damper Actuators Location & Data	Station Ventilation Room(s) / Area(s)		HVAC Controller Equipment No.		HVAC Control Panel Equip. No. ☐ N/A
	Drawings:	HVAC P&ID:	Control Panel:		Dampers Loop:
	Supply Damper Actuator:	Room Installed:	Equipment No.		Control Type: ☐ Modulating ☐ On / Off
		Manufacturer:	Catalog No.		Serial #:
		Power Supply: VAC / VDC	Torque:	Nm	Runtime: sec.
		Control Input: VAC / VDC	Control Output:	VAC / VDC	Auxiliary Switch Provided: ☐ Yes ☐ No
	Return Damper Actuator:	Room Installed:	Equipment No.		Type: ☐ Modulating ☐ On/Off
		Manufacturer:	Catalog No.		Serial #:
		Power Supply: VAC / VDC	Torque:	Nm	Runtime: sec.
		Control Input: VAC / VDC	Control Output:	VAC / VDC	Auxiliary Switch Provided: ☐ Yes ☐ No
	Exhaust Damper Actuator:	Room Installed:	Equipment No.		Type: ☐ Modulating ☐ On/Off
		Manufacturer:	Catalog No.		Serial #:
		Power Supply: VAC / VDC	Torque:	Nm	Runtime: sec.
		Control Input: VAC / VDC	Control Output:	VAC / VDC	Auxiliary Switch Provided: ☐ Yes ☐ No

Visual Inspection / Cleaning			
	HVAC Damper Lamacoids Installed: ☐ Yes ☐ No	HVAC Damper Actuator Lamacoids Installed: ☐ Yes ☐ No	
	Power Cables Labelled at Both Ends: ☐ Yes ☐ No	Control Cables Labelled at Both Ends: ☐ Yes ☐ No	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor	Power Cable Connections: ☐ Good ☐ Acceptable ☐ Poor	
	Fully Functioning Actuators: ☐ Good ☐ Acceptable ☐ Poor	Actuators Properly Installed: ☐ Good ☐ Acceptable ☐ Poor	
	All Actuator Inputs Work: ☐ Good ☐ Acceptable ☐ Poor	All Actuator Outputs Work: ☐ Good ☐ Acceptable ☐ Poor	
	Cables Supported Appropriately: ☐ Yes ☐ No ☐ N/A	Equipment Cleaned: ☐ Yes	Photographs Taken: ☐ Yes
	Comments:		

Operational Testing					
	Supply Actuator Measured Opening Time: sec		Supply Actuator Measured Closing Time: sec		
	Return Actuator Measured Opening Time: sec		Return Actuator Measured Closing Time: sec		
	Exhaust Actuator Measured Opening Time: sec		Exhaust Actuator Measured Closing Time: sec		
	Supply Damper Changes From Low Ventilation to High Ventilation: ☐ Yes ☐ No		Supply Damper Changes From High Ventilation to Low Ventilation: ☐ Yes ☐ No		
	Return Damper Changes From Low Ventilation to High Ventilation: ☐ Yes ☐ No		Return Damper Changes From High Ventilation to Low Ventilation: ☐ Yes ☐ No		
	Exhaust Damper Changes From Low Ventilation to High Ventilation: ☐ Yes ☐ No		Exhaust Damper Changes From High Ventilation to Low Ventilation: ☐ Yes ☐ No		
	Operating Modes	*Mode Description*	*Fail-Safe Position*	*Low Ventilation Rate*	*High Ventilation Rate*
		Supply Damper Open Position	☐ Opened ☐ Closed	%	%
		Return Damper Open Position	☐ Opened ☐ Closed	%	%
		Exhaust Damper Open Position	☐ Opened ☐ Closed	%	%
	Comments:				

Winnipeg	**COMMISSIONING FORM** **HVAC DAMPERS**	Page 2 of 3
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Damper Actuator Settings				
	Adjust Damper Actuator Settings for Damper Balancing			Comments:
	Damper Settings Applied to: ☐ Supply Damper ☐ Return Damper ☐ Exhaust Damper			
	Supply Damper Actuator	Direction Control ☐ CCW ☐ CCW	Angle of Rotation Positions Starting: Ending:	Auxiliary Switch Position ☐ Not Used
	Return Damper Actuator	Direction Control ☐ CCW ☐ CCW	Angle of Rotation Positions Starting: Ending:	Auxiliary Switch Position ☐ Not Used
	Exhaust Damper Actuator	Direction Control ☐ CCW ☐ CCW	Angle of Rotation Positions Starting: Ending:	Auxiliary Switch Position ☐ Not Used

Actuator Input / Output Control Signals								
	Verify Control Signals Between HVAC Controller and Dampers				Comments:			
	Test Preparation: Test physical signals rather than installing jumpers for signals							
	Field Wires Labelled at Both Ends: ☐ Yes ☐ No							
Low Ventilation Rate	*Actuator*	*Signal Type*	*Measured Input Voltage*	*Measured Output Voltage*	*Output Received at PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*	
	Supply Damper ☐ Not Used	☐ 0 – 5V ☐ 0 – 10V ☐ On / Off	VDC	VDC	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	
	Return Damper ☐ Not Used	☐ 0 – 5V ☐ 0 – 10V ☐ On / Off	VDC	VDC	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	
	Exhaust Damper ☐ Not Used	☐ 0 – 5V ☐ 0 – 10V ☐ On / Off	VDC	VDC	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	
High Ventilation Rate	*Actuator*	*Signal Type*	*Measured Input Voltage*	*Measured Output Voltage*	*Output Received at PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*	
	Supply Damper ☐ Not Used	☐ 0 – 5V ☐ 0 – 10V ☐ On / Off	VDC	VDC	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	
	Return Damper ☐ Not Used	☐ 0 – 5V ☐ 0 – 10V ☐ On / Off	VDC	VDC	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	
	Exhaust Damper ☐ Not Used	☐ 0 – 5V ☐ 0 – 10V ☐ On / Off	VDC	VDC	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	

Final Analysis			
	Returned to Service: ☐ Yes ☐ No	Comments:	
	Monitoring / Further Inspection Required: ☐ Yes ☐ No		
	Repair / Replacement Required: ☐ Yes ☐ No		

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

	Company	Name	Signature	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **HVAC FANS & STARTERS**	Page 1 of 3 Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Starter Location & Data	Starter Downstream Load:		Starter Location:			Section No. ☐ N/A	
	Drawings:	Single Line:	Schematic:			Connection:	
	Contactor Ratings:	Manufacturer:	Model:			Serial #:	
		Power Rating:	Rated Voltage: VAC	Current Rating: A		Control Voltage: VAC	
	Circuit Protection:	☐ Breaker ☐ Fuse	Rating: A	Inst. Setting: A		Manufacturer: Model:	
	Exhaust Contactor: ☐ N/A	Type: ☐ NEMA ☐ IEC ☐ N/A	Manufacturer:			Model:	
			NEMA Size: ☐ N/A			IEC Rating: A ☐ AC-3 ☐ AC-4	
	Supply Contactor: ☐ N/A	Type: ☐ NEMA ☐ IEC ☐ N/A	Manufacturer:			Model:	
			NEMA Size: ☐ N/A			IEC Rating: ☐ AC-3 ☐ AC-4	
	Overload Protection:	☐ Thermal ☐ Electronic ☐ Not Applicable	Class: ☐ 10 ☐ 20 ☐ 30 ☐ Unknown	Setting / Rating: A		Manufacturer: Model:	
	Current Transformer:	Ratio:				Type:	
	Control Power Transformer:	Size: VA	Secondary Voltage: V			Primary Fuse: A	Secondary Fuse: A

Exhaust Fan Data	Equipment Tag:	Power: kW / HP		Voltage: VAC
	Full Load Amps: A	Service Factor:	Inverter Duty Rated: ☐ Yes ☐ No	Insulation Class:

Supply Fan Data	Equipment Tag:	Power: kW / HP		Voltage: VAC
	Full Load Amps: A	Service Factor:	Inverter Duty Rated: ☐ Yes ☐ No	Insulation Class:

Visual Inspection / Cleaning	Fan Lamacoid(s) Installed: ☐ Yes ☐ No		Visual Signs of Overheating: ☐ Yes ☐ No	
	Power Cables Labelled at Both Ends: ☐ Yes ☐ No		Control Cables Labelled at Both Ends: ☐ Yes ☐ No	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor		Power Cable Connections: ☐ Good ☐ Acceptable ☐ Poor	
	Control Cable Connections: ☐ Good ☐ Acceptable ☐ Poor		Elec / Mech Interlocks: ☐ Good ☐ Acceptable ☐ Poor	
	Door Mechanical: ☐ Good ☐ Acceptable ☐ Poor		Contactor Alignment: ☐ Good ☐ Acceptable ☐ Poor	
	Door Mechanical: ☐ Good ☐ Acceptable ☐ Poor		Contact Alignment: ☐ Good ☐ Acceptable ☐ Poor	
	Verify O/L element are correctly sized for the loads: ☐ Yes ☐ No ☐ N/A		Exercised Circuit Breaker / Disconnect: ☐ Yes ☐ No	
	Cables Supported Appropriately: ☐ Yes ☐ No		Equipment Cleaned: ☐ Yes	Photograph Taken: ☐ Yes
	Comments:			

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Contact / Pole Measurements

Test	Resistance (μΩ)			Test Summary
	Phase A	Phase B	Phase C	☐ Test Passed
Exhaust Fan Contactor Contact				☐ Test Inconclusive Further Investigation Required.
Supply Fan Contactor Contact				
Breaker / Disconnect				☐ Test Failed

Comments:

Insulation Resistance Test

Test Preparation:
Setup:
Source: ☐ Isolated
Contactor: ☐ Open

Cable Destination / Load:
☐ Disconnected
☐ Connected with Load Isolated

Note: Approval of City's Representative is required, prior to leaving cables connected during the test.

WARNING: DISCONNECT ALL POWER CABLES FROM CONTACTORS AND DISCONNECT ALL CONTROL POWER FUSES PRIOR TO TEST.

Test	Voltage	Insulation Resistance (MΩ)			Ground all phases not under test!
		Phase A	Phase B	Phase C	
Exhaust Contactor Line to Ground	1000 VDC				**Test Summary**
Exhaust Contactor Load to Ground	1000 VDC				☐ Test Passed
Exhaust Contactor Line to Load	1000 VDC				☐ Test Inconclusive Further Investigation Required.
Supply Contactor Line to Ground	1000 VDC				
Supply Contactor Load to Ground	1000 VDC				☐ Test Failed
Supply Contactor Line to Load	1000 VDC				

Comments:

Starter & PLC Control Signals

Verify Control Signals Between Starter and PLC

Test Preparation: Test physical signals rather than installing jumpers for signals

Field Wires Labelled at Both Ends: ☐ Yes ☐ No

Comments:

Supply Fan Signals	*Signal Description*	*Pilot Light Illuminates*	*Signal Received at PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*
	Manual Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	Auto Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	Run	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	Overload / Fault	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Exhaust Fan Signals	*Signal Description*	*Pilot Light Illuminates*	*Signal Received at PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*
	Manual Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	Auto Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	Run	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	Overload / Fault	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Winnipeg	**COMMISSIONING FORM** **HVAC FANS & STARTERS**	Page 3 of 3
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Operational Testing										
	Exhaust Fan Measured Current	Phase A	A	Phase B	A	Phase C	A			
	Supply Fan Measured Current	Phase A	A	Phase B	A	Phase C	A			
	Operating Modes	*Mode Description*		*Run Start & Stop*			*Overload Disables Run*			
		Manual Mode		☐ Yes	☐ No	☐ N/A	☐ Yes	☐ No	☐ N/A	
		Automatic Mode		☐ Yes	☐ No	☐ N/A	☐ Yes	☐ No	☐ N/A	
	Comments:									

Final Analysis				
	Returned to Service:	☐ Yes	☐ No	Comments:
	Monitoring / Further Inspection Required:	☐ Yes	☐ No	
	Repair / Replacement Required:	☐ Yes	☐ No	

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

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Winnipeg	**COMMISSIONING FORM** **INSTRUMENT TRANSMITTER (CONTROLLER)**	Page 1 of 3
		Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Instrument Data	**Drawings:**	P&ID:	Control Panel:	Loop Diagram:
	Instrument:	Room Installed:	Equipment No.	Output Signal: ☐ 4 – 20 mA ☐ 0 – 10V
		Manufacturer:	Catalog No.	Serial #:
		Power Supply: VAC / VDC	Loop Powered ☐ Yes ☐ No	Auxiliary Contacts Provided: ☐ Yes ☐ No

Visual Inspection / Cleaning	Instrument Lamacoid Installed: ☐ Yes ☐ No		Instrument Properly Mounted: ☐ Yes ☐ No	
	Power Cables Labelled at Both Ends: ☐ Yes ☐ No		Control Cables Labelled at Both Ends: ☐ Yes ☐ No	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor		Wiring Matches Loop Diagram: ☐ Good ☐ Acceptable ☐ Poor	
	Fully Functioning Instrument: ☐ Good ☐ Acceptable ☐ Poor		Fully Functioning Output Signal(s): ☐ Good ☐ Acceptable ☐ Poor	
	Instrument Display Works Properly: ☐ Yes ☐ No ☐ N/A		Equipment Cleaned: ☐ Yes	Photographs Taken: ☐ Yes
	Comments:			

Instrument Operational Testing

Test instrument for normal analog reading level along with alarm level condition.

Operational testing should be done as follows:

1. For flow detection, use a multimeter to simulate
2. For gas detection, use a gas calibration kit to simulate signal for flow alarm level
3. For level detection, use a physical level and/or simulated signal for level alarm level.
4. For pressure detection, use a multimeter to simulate signal for pressure alarm level.
5. For temperature detection, use a heat gun and/or multimeter for temperature alarm level.
6. For vibration detection, use a multimeter to simulate signal for vibration alarm level.

Analog Outputs Match Instrument Readings: ☐ Yes ☐ No	Display Reflects Instrument Readings (if applicable): ☐ Yes ☐ No
Alarm Condition Visually Appears on Display (if applicable) ☐ Yes ☐ No	Alarm Condition Annunciates from Instrument (if applicable) ☐ Yes ☐ No
Alarm Outputs Automatically Reset Once Alarm Levels Clear (if applicable): ☐ Yes ☐ No	Alarm Output Contacts Change State When Alarm Levels Reached (if applicable): ☐ Yes ☐ No

Operating Modes	*Sensor*	*Mode Description*	*Alarm Output Contact State*	*Measured Analog Output Signal*	*Instrument Display (include units)*
	Sensor 1	Instrument Normal Level Operation	☐ Opened ☐ Closed ☐ N/A	☐ mA ☐ V	☐ N/A
		Instrument Alarm Level Operation	☐ Opened ☐ Closed ☐ N/A	☐ mA ☐ V	☐ N/A
	Sensor 2 ☐ N/A	Instrument Normal Level Operation	☐ Opened ☐ Closed ☐ N/A	☐ mA ☐ V	☐ N/A
		Instrument Alarm Level Operation	☐ Opened ☐ Closed ☐ N/A	☐ mA ☐ V	☐ N/A

Comments:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Instrument Output Control Signals

Verify Control Signals Between Instrument and Control Panel	Comments:
Test Preparation: Test physical signals rather than installing jumpers for signals	
Field Wires Labelled at Both Ends: ☐ Yes ☐ No	

Analog Output Signal 1	*Signal Type (Flow, Gas Reading, Level, Pressure, Temperature, Vibration, etc.)*	*Transmitter Display (include units)*	*Measured Output Signal*	*Output Received at PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*
		☐ N/A	☐ mA ☐ V	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Analog Output Signal 2	*Signal Type (Flow, Gas Reading, Level, Pressure, Temperature, Vibration, etc.)*	*Transmitter Display (include units)*	*Measured Output Signal*	*Output Received at PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*
	☐ N/A	☐ N/A	☐ mA ☐ V	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Discrete Output 1	Signal Description	State	Description	*Output Received at PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*
		0		☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	☐ N/A	1		☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Discrete Output 2	Signal Description	State	Description	*Output Received at PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*
		0		☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	☐ N/A	1		☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Discrete Output 3	Signal Description	State	Description	*Output Received at PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*
		0		☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	☐ N/A	1		☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Discrete Output 4	Signal Description	State	Description	*Output Received at PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*
		0		☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	☐ N/A	1		☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Final Analysis

		Comments:
Returned to Service:	☐ Yes ☐ No	
Monitoring / Further Inspection Required:	☐ Yes ☐ No	
Repair / Replacement Required:	☐ Yes ☐ No	

Winnipeg	**COMMISSIONING FORM** **INSTRUMENT TRANSMITTER (CONTROLLER)**	Page 3 of 3
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

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Winnipeg	**COMMISSIONING FORM** **OUTDOOR LIGHTING**	Page 1 of 2 Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact		
	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Outdoor Lighting Location & Data						
	Battery Bank Location:	Battery Bank Equipment No.	Panel Feed: Circuit No.	Control Panel No.	Applicable Drawings:	
	Outdoor Lighting Fixtures:	Manufacturer:	Catalog No.		Control Type	
		Rated Voltage: VAC	Input Current: A	Lamp Wattage: W	Outdoor Fixtures Qty:	
		Installed on Outdoor Walls: ☐ North ☐ East ☐ South ☐ West				
	Photocell:	Manufacturer:	Catalog No.	Adjustable Turn-On Level: ☐ Yes ☐ No Adjustable Turn-Off Level: ☐ Yes ☐ No		
		Rated Voltage: VAC	Rated Current: A	Installed Location:	Turn-On / Turn-Off Ratio: ☐ N/A	

Visual Inspection / Cleaning				
	Identification Lamacoids Installed: ☐ Yes ☐ No		Lamps Properly Aimed: ☐ Yes ☐ No	
	Visual Signs of Moisture: ☐ Yes ☐ No		All Lamps Properly Operate: ☐ Yes ☐ No	
	Outdoor Lights Moisture Proof Rated: ☐ Yes ☐ No ☐ N/A		Outdoor Light Levels Adjustable: ☐ Yes ☐ No ☐ N/A	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor		Cable Connections: ☐ Good ☐ Acceptable ☐ Poor	
	Ground Connections: ☐ Good ☐ Acceptable ☐ Poor		Connections Properly Sealed: ☐ Good ☐ Acceptable ☐ Poor	
	Photocell Installation: ☐ Good ☐ Acceptable ☐ Poor		Dimming Controller Installation: ☐ Good ☐ Acceptable ☐ Poor	
	Cables Supported Appropriately: ☐ Yes ☐ No		Equipment Cleaned: ☐ Yes	Photograph Taken: ☐ Yes
	Comments:			

Photocell & Controller Testing				
	Battery Bank Temperature Before Starting Testing: °C		Battery Bank Temperature After Testing Completed: °C	**Test Summary** ☐ Test Passed ☐ Test Inconclusive ☐ Further Investigation Required ☐ Test Failed
	Photocell Turn-On Level: foot-candles		Photocell Turn-On Time: sec	
	Photocell Turn-Off Level: foot-candles		Photocell Turn-Off Time: sec	
	Measured Light Output: foot-candles		Dimming Controller Output: V	
	Comments:			

Operational Testing			
	Outdoor Lights Turn On and Off by Photocell in Automatic Mode: ☐ Yes ☐ No	Outdoor Lights Turn On in Manual Mode: ☐ Yes ☐ No	
	Light Output Adjustable by Dimming Controller: ☐ Yes ☐ No	Photocell Turn-On Level:	foot-candles
Operating Modes	*Mode Description*	*Outdoor Lights On*	*Time For Outdoor Lights to Turn On*
	Automatic Mode – Normal Operation	No	N/A
	Automatic Mode – Photocell Operation	☐ Yes ☐ No	sec
	Manual Mode – Individual Normal Lighting Circuits Fail	☐ Yes ☐ No	sec
	Comments:		

Winnipeg	**COMMISSIONING FORM OUTDOOR LIGHTING**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Final Analysis			Comments:
	Returned to Service:	☐ Yes ☐ No	
	Monitoring / Further Inspection Required:	☐ Yes ☐ No	
	Repair / Replacement Required:	☐ Yes ☐ No	

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM PANELBOARD**	Page 1 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact		
	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Panelboard Location & Data					
	Panel Equipment No.		Panel Location:		Fed From:
	Drawings:	Single Line:	Panel Schedule:		Schematic:
	Panelboard Ratings:	Manufacturer:	Model:		Serial #:
		Ampacity: A Withstand: kAIC	Rated Voltage: VAC	No. of Circuits:	☐ Single Phase ☐ 3-wire ☐ Three Phase ☐ 4-wire
	Main Breaker:	☐ Top Installed ☐ Bottom Installed ☐ N/A	Rating: A	Inst. Setting: A ☐ N/A	Manufacturer: Model:

Branch Breakers	*List all branch breakers installed. Separate each common size breaker for number of poles (1-pole, 2-pole & 3-pole) and GFCI rated.*						
	Breaker Size (A)	No. of Poles	GFCI Rated (Yes / No)	Manufacturer	Model No.	Interrupting Rating (kA)	Notes
	Comments:						

Visual Inspection / Cleaning								
	Panelboard Lamacoid Installed:	☐ Yes	☐ No		Visual Signs of Overheating:	☐ Yes	☐ No	
	Power Cables Labelled:	☐ Yes	☐ No		Any Exposed Energized Metal:	☐ Yes	☐ No	
	Typewritten Directory Installed:	☐ Yes	☐ No		All Breaker Sizes Match Drawings:	☐ Yes	☐ No	
	Cleanliness:	☐ Good	☐ Acceptable	☐ Poor	Enclosure Cover Secured:	☐ Good	☐ Acceptable	☐ Poor
	Door Mechanical:	☐ Good	☐ Acceptable	☐ Poor	Ground Connection:	☐ Good	☐ Acceptable	☐ Poor
	Exercised Main Breaker:	☐ Yes	☐ No	☐ N/A	Exercised All Branch Circuit Breakers:	☐ Yes	☐ No	
	Cables Supported Appropriately:	☐ Yes	☐ No		Equipment Cleaned: ☐ Yes	Photograph Taken:	☐ Yes	
	Comments:							

Main Breaker Measurements	**Test**	**Resistance (μΩ)**			**Test Summary**
		Phase A	**Phase B**	**Phase C**	☐ Test Passed
	Main Breaker Pole Measurements				☐ Further Investigation Required.
					☐ Test Failed
	Comments:				

Winnipeg	**COMMISSIONING FORM PANELBOARD**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Insulation Resistance Test

Test Preparation: Source:
☐ Disconnected
☐ Connected with Source Isolated

Note: Approval of City's Representative is required, prior to leaving cables connected during the test.

WARNING: DISCONNECT INCOMING SOURCE POWER CABLES PRIOR TO TEST.

Test	**Voltage**	**Insulation Resistance (MΩ)**			Ground all phases not under test!
		Phase A	**Phase B**	**Phase C**	
Main Breaker Line Side to Ground	500 VDC				**Test Summary**
Main Breaker Load Side to Ground	500 VDC				☐ Test Passed
Bus Bars to Ground	500 VDC				☐ Further Investigation Required. ☐ Test Failed

Comments:

Final Analysis

Returned to Service:	☐ Yes	☐ No	Comments:
Monitoring / Further Inspection Required:	☐ Yes	☐ No	
Repair / Replacement Required:	☐ Yes	☐ No	

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **PLC ANALOG INPUT CARD**	Page 1 of 2 Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

PLC Data	PLC Enclosure Name:		PLC Manufacturer:	PLC Model:
	Card Catalog No.		Rated Input Voltage: VDC	Inputs 0-7 Fuse No.
	Documents:	I/O Wiring Dwg:	DNP3 I/O File:	Control Narrative:
	PLC:	Equipment Tag:	Rack:	Module:

Visual Inspection	Pre-Manufactured Cable Labelled:	☐ Yes	☐ No	Pre-Manufactured Cable Tag:				
	All Inputs Wired to Terminal Blocks:	☐ Yes	☐ No	All Input Wires Labelled at Terminal Blocks:	☐ Yes	☐ No		
	All Inputs Separately Fused:	☐ Yes	☐ No	All Inputs Wired at Analog Input Card:	☐ Yes	☐ No		
	Cleanliness:	☐ Good	☐ Acceptable ☐ Poor	Wire Connections Both Ends:	☐ Good	☐ Acceptable	☐ Poor	
	Fully Functioning Card:	☐ Good	☐ Acceptable ☐ Poor	Card Secured on PLC Rack:	☐ Good	☐ Acceptable	☐ Poor	
	Card Fully Programmed:	☐ Good	☐ Acceptable ☐ Poor	All Card Input Lights Work:	☐ Good	☐ Acceptable	☐ Poor	
	Comments:							

Point	Physical Tag	Description	Signal Type	Signal Mapping	PLC Input	Local HMI	SCADA	Condition Pickup Level	Pass (P/F)
0			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low: mA/V = High: mA/V =	☐	☐	☐	☐ Low ☐ High ☐ N/A	
1			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low: mA/V = High: mA/V =	☐	☐	☐	☐ Low ☐ High ☐ N/A	
2			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low: mA/V = High: mA/V =	☐	☐	☐	☐ Low ☐ High ☐ N/A	
3			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low: mA/V = High: mA/V =	☐	☐	☐	☐ Low ☐ High ☐ N/A	
4			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low: mA/V = High: mA/V =	☐	☐	☐	☐ Low ☐ High ☐ N/A	
5			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low: mA/V = High: mA/V =	☐	☐	☐	☐ Low ☐ High ☐ N/A	
6			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low: mA/V = High: mA/V =	☐	☐	☐	☐ Low ☐ High ☐ N/A	
7			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low: mA/V = High: mA/V =	☐	☐	☐	☐ Low ☐ High ☐ N/A	

Winnipeg	**COMMISSIONING FORM** **PLC ANALOG INPUT CARD**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Final Analysis				
	Returned to Service:	☐ Yes	☐ No	Comments:
	Monitoring / Further Inspection Required:	☐ Yes	☐ No	
	Repair / Replacement Required:	☐ Yes	☐ No	

Comments:

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **PLC ANALOG INPUT RTD CARD**	Page 1 of 2 Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact		
	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

PLC Data				
	PLC Enclosure Name:		PLC Manufacturer:	PLC Model:
	Card Catalog No.		Rated Input Voltage: VDC	Inputs 0-7 Fuse No.
	Documents:	I/O Wiring Dwg:	DNP3 I/O File:	Control Narrative:
	PLC:	Equipment Tag:	Rack:	Module:

Visual Inspection				
	Pre-Manufactured Cable Labelled: ☐ Yes ☐ No		Pre-Manufactured Cable Tag:	
	All Inputs Wired to Terminal Blocks: ☐ Yes ☐ No		All Input Wires Labelled at Terminal Blocks: ☐ Yes ☐ No	
	All Inputs Separately Fused: ☐ Yes ☐ No		All Inputs Wired at Analog Input RTD Card: ☐ Yes ☐ No	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor		Wire Connections Both Ends: ☐ Good ☐ Acceptable ☐ Poor	
	Fully Functioning Card: ☐ Good ☐ Acceptable ☐ Poor		Card Secured on PLC Rack: ☐ Good ☐ Acceptable ☐ Poor	
	Card Fully Programmed: ☐ Good ☐ Acceptable ☐ Poor		All Card Input Lights Work: ☐ Good ☐ Acceptable ☐ Poor	
	Comments:			

Point	Physical Tag	Description	Signal Type	Signal Mapping Range	PLC Input	Local HMI	SCADA	Condition Pickup Level	Pass (P/F)
0			☐ 2-wire RTD ☐ 3-wire RTD ☐ PT100	°C - °C	☐	☐	☐	☐ Low ☐ High ☐ N/A	
1			☐ 2-wire RTD ☐ 3-wire RTD ☐ PT100	°C - °C	☐	☐	☐	☐ Low ☐ High ☐ N/A	
2			☐ 2-wire RTD ☐ 3-wire RTD ☐ PT100	°C - °C	☐	☐	☐	☐ Low ☐ High ☐ N/A	
3			☐ 2-wire RTD ☐ 3-wire RTD ☐ PT100	°C - °C	☐	☐	☐	☐ Low ☐ High ☐ N/A	
4			☐ 2-wire RTD ☐ 3-wire RTD ☐ PT100	°C - °C	☐	☐	☐	☐ Low ☐ High ☐ N/A	
5			☐ 2-wire RTD ☐ 3-wire RTD ☐ PT100	°C - °C	☐	☐	☐	☐ Low ☐ High ☐ N/A	
6			☐ 2-wire RTD ☐ 3-wire RTD ☐ PT100	°C - °C	☐	☐	☐	☐ Low ☐ High ☐ N/A	
7			☐ 2-wire RTD ☐ 3-wire RTD ☐ PT100	°C - °C	☐	☐	☐	☐ Low ☐ High ☐ N/A	

Winnipeg	**COMMISSIONING FORM** **PLC ANALOG INPUT RTD CARD**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Final Analysis				
	Returned to Service:	☐ Yes	☐ No	Comments:
	Monitoring / Further Inspection Required:	☐ Yes	☐ No	
	Repair / Replacement Required:	☐ Yes	☐ No	

Comments:

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **PLC ANALOG OUTPUT CARD**	Page 1 of 2 Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

PLC Data	PLC Enclosure Name:		PLC Manufacturer:	PLC Model:
	Card Catalog No.		Rated Output Voltage: VAC / VDC	Outputs 0-3 Fuse No.
	Documents:	I/O Wiring Dwg:	DNP3 I/O File:	Control Narrative:
	PLC:	Equipment Tag:	Rack:	Module:

Visual Inspection	Pre-Manufactured Cable Labelled:	☐ Yes	☐ No	Pre-Manufactured Cable Tag:				
	All Outputs Wired to Terminal Blocks:	☐ Yes	☐ No	All Output Wires Labelled at Terminal Blocks:	☐ Yes	☐ No		
	All Outputs Separately Fused:	☐ Yes	☐ No	All Outputs Wired at Analog Output Card:	☐ Yes	☐ No		
	Cleanliness:	☐ Good	☐ Acceptable ☐ Poor	Wire Connections Both Ends:	☐ Good	☐ Acceptable	☐ Poor	
	Fully Functioning Card:	☐ Good	☐ Acceptable ☐ Poor	Card Secured on PLC Rack:	☐ Good	☐ Acceptable	☐ Poor	
	Card Fully Programmed:	☐ Good	☐ Acceptable ☐ Poor	All Card Input Lights Work:	☐ Good	☐ Acceptable	☐ Poor	
	Comments:							

Point	Physical Tag	Description	Signal Type	State Mapping	PLC Input	SCADA	Field Device	Pass (P/F)
0			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low mA/V = High mA/V =	☐	☐	☐	
1			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low mA/V = High mA/V =	☐	☐	☐	
2			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low mA/V = High mA/V =	☐	☐	☐	
3			☐ 0 – 20mA ☐ 4 – 20mA ☐ 0 – 10V	Low mA/V = High mA/V =	☐	☐	☐	

Final Analysis	Returned to Service:	☐ Yes	☐ No	Comments:
	Monitoring / Further Inspection Required:	☐ Yes	☐ No	
	Repair / Replacement Required:	☐ Yes	☐ No	

Comments:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

	Company	Name	Signature	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **PLC DISCRETE INPUT CARD**	Page 1 of 3 Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

PLC Data	PLC Enclosure Name:		PLC Manufacturer:	PLC Model:
	Card Catalog No.		Rated Inputs Voltage: VAC / VDC	Inputs 0-15 Fuse No. Inputs 16-31 Fuse No.
	Documents:	I/O Wiring Dwg:	DNP3 I/O File:	Control Narrative:
	PLC:	Equipment Tag:	Rack:	Module:

Visual Inspection	Pre-Manufactured Cable Labelled: ☐ Yes ☐ No		Pre-Manufactured Cable Tag:	
	All Inputs Wired to Terminal Blocks: ☐ Yes ☐ No		All Input Wires Labelled at Terminal Blocks: ☐ Yes ☐ No	
	All Inputs Separately Fused: ☐ Yes ☐ No		All Inputs Wired at Discrete Input Card: ☐ Yes ☐ No	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor		Wire Connections Both Ends: ☐ Good ☐ Acceptable ☐ Poor	
	Fully Functioning Card: ☐ Good ☐ Acceptable ☐ Poor		Card Secured on PLC Rack: ☐ Good ☐ Acceptable ☐ Poor	
	Card Fully Programmed: ☐ Good ☐ Acceptable ☐ Poor		All Card Input Lights Work: ☐ Good ☐ Acceptable ☐ Poor	
	Comments:			

TESTING: ALL DISCRETE INPUTS SHOULD BE TESTED AT THE INSTRUMENT END AS BEST AS POSSIBLE TO VERIFY CABLING. AS AN EXAMPLE, A MANUAL MODE STATUS WOULD BE TESTED AT THE MOTOR STARTER SELECTOR SWITCH TO VERIFY STATES AT THE PLC CARD.

Point	Physical Tag	Description	State	State Description	PLC Input	Local HMI	SCADA	Alarm	Pass (P/F)
0			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
1			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
2			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
3			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
4			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
5			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
6			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
7			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	

Winnipeg	**COMMISSIONING FORM** **PLC DISCRETE INPUT CARD**	Page 2 of 3
		Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

TESTING: ALL DISCRETE INPUTS SHOULD BE TESTED AT THE INSTRUMENT END AS BEST AS POSSIBLE TO VERIFY CABLING. AS AN EXAMPLE, A MANUAL MODE STATUS WOULD BE TESTED AT THE MOTOR STARTER SELECTOR SWITCH TO VERIFY STATES AT THE PLC CARD.

Point	Physical Tag	Description	State	State Description	PLC Input	Local HMI	SCADA	Alarm	Pass (P/F)
8			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
9			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
10			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
11			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
12			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
13			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
14			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
15			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	

TESTING: ALL DISCRETE INPUTS SHOULD BE TESTED AT THE INSTRUMENT END AS BEST AS POSSIBLE TO VERIFY CABLING. AS AN EXAMPLE, A MANUAL MODE STATUS WOULD BE TESTED AT THE MOTOR STARTER SELECTOR SWITCH TO VERIFY STATES AT THE PLC CARD.

Point	Physical Tag	Description	State	State Description	PLC Input	Local HMI	SCADA	Alarm	Pass (P/F)
16			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
17			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
18			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
19			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
20			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
21			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	

Winnipeg	**COMMISSIONING FORM** **PLC DISCRETE INPUT CARD**	Page 3 of 3
		Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

TESTING: ALL DISCRETE INPUTS SHOULD BE TESTED AT THE INSTRUMENT END AS BEST AS POSSIBLE TO VERIFY CABLING. AS AN EXAMPLE, A MANUAL MODE STATUS WOULD BE TESTED AT THE MOTOR STARTER SELECTOR SWITCH TO VERIFY STATES AT THE PLC CARD.

Point	Physical Tag	Description	State	State Description	PLC Input	Local HMI	SCADA	Alarm	Pass (P/F)
22			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
23			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
24			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
25			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
26			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
27			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
28			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
29			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
30			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
31			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	

Final Analysis			Comments:
	Returned to Service:	☐ Yes ☐ No	
	Monitoring / Further Inspection Required:	☐ Yes ☐ No	
	Repair / Replacement Required:	☐ Yes ☐ No	

Comments:

	Company	Name	Signature	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

Note: The General Contractor Representative is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**COMMISSIONING FORM** **PLC DISCRETE OUTPUT CARD**	Page 1 of 2 Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

PLC Data	PLC Enclosure Name:		PLC Manufacturer:	PLC Model:
	Card Catalog No.		Rated Output Voltage: VAC / VDC	Outputs 0-7 Fuse No.
	Documents:	I/O Wiring Dwg:	DNP3 I/O File:	Control Narrative:
	PLC:	Equipment Tag:	Rack:	Module:

Visual Inspection	Pre-Manufactured Cable Labelled:	☐ Yes	☐ No	Pre-Manufactured Cable Tag:				
	All Outputs Wired to Terminal Blocks:	☐ Yes	☐ No	All Output Wires Labelled at Terminal Blocks:	☐ Yes	☐ No		
	All Outputs Separately Fused:	☐ Yes	☐ No	All Outputs Wired at Discrete Output Card:	☐ Yes	☐ No		
	Cleanliness:	☐ Good	☐ Acceptable ☐ Poor	Wire Connections Both Ends:	☐ Good	☐ Acceptable	☐ Poor	
	Fully Functioning Card:	☐ Good	☐ Acceptable ☐ Poor	Card Secured on PLC Rack:	☐ Good	☐ Acceptable	☐ Poor	
	Card Fully Programmed:	☐ Good	☐ Acceptable ☐ Poor	All Card Input Lights Work:	☐ Good	☐ Acceptable	☐ Poor	
	Comments:							

Point	Physical Tag	Description	State	State Description	PLC Output	SCADA	Field Device	Pass (P/F)
0			0		☐	☐	☐	
			1		☐	☐	☐	
1			0		☐	☐	☐	
			1		☐	☐	☐	
2			0		☐	☐	☐	
			1		☐	☐	☐	
3			0		☐	☐	☐	
			1		☐	☐	☐	
4			0		☐	☐	☐	
			1		☐	☐	☐	
5			0		☐	☐	☐	
			1		☐	☐	☐	
6			0		☐	☐	☐	
			1		☐	☐	☐	
7			0		☐	☐	☐	
			1		☐	☐	☐	

Winnipeg	**COMMISSIONING FORM** **PLC DISCRETE OUTPUT CARD**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Final Analysis				
	Returned to Service:	☐ Yes	☐ No	Comments:
	Monitoring / Further Inspection Required:	☐ Yes	☐ No	
	Repair / Replacement Required:	☐ Yes	☐ No	

Comments:

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

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Winnipeg	**COMMISSIONING FORM** **PLC SYSTEM**	Page 1 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact		
	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

PLC Data				
	PLC Enclosure Name:		PLC Manufacturer:	PLC Model:
	PLC No. of Modules (Slots)		Rated PLC Voltage: VAC / VDC	Communication to SCADA: ☐ Wired ☐ Wireless
	HMI Screen Installed: ☐ Yes ☐ N/A		HMI Manufacturer:	HMI Model:
	Documents:	Power Dist Schem.	Pump Ctrl Schematic:	Control Narrative:
		Network Diagram:	PLC Mode Schematic	DNP3 I/O List:
	PLC:	Power Supply Catalog No.	Rack Number	Module (Slot) No.
		Processor Card Catalog No.	Rack Number	Module (Slot) No.
		Communication Card Catalog No.	Rack Numbers	Module (Slot) No.

Visual Inspection / Cleaning			
	PLC Lamacoid Installed: ☐ Yes ☐ No	Visual Signs of Overheating: ☐ Yes ☐ No	
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor	PLC Properly Mounted: ☐ Good ☐ Acceptable ☐ Poor	
	Fully Functioning PLC: ☐ Good ☐ Acceptable ☐ Poor	PLC Fully Programmed: ☐ Good ☐ Acceptable ☐ Poor	
	All Cards Work: ☐ Yes ☐ No ☐ N/A	Equipment Cleaned: ☐ Yes	Photograph Taken: ☐ Yes
	Comments:		

Operational Testing						
	Wet Well Levels Start and Stop Pumps: ☐ Yes ☐ No ☐ N/A	Comments:				
	PLC Mode Cycles Pump Duties: ☐ Yes ☐ No ☐ N/A					
	HMI Screen Functions Properly: ☐ Yes ☐ No ☐ N/A					
	Alarm Test Switch Block Alarms to SCADA: ☐ Yes ☐ No ☐ N/A					
	HMI Screen Functions Properly: ☐ Yes ☐ No ☐ N/A					
	Local Mode Pushbutton Works: ☐ Yes ☐ No ☐ N/A	PLC Mode Pushbutton Works: ☐ Yes ☐ No ☐ N/A				
	PLC Reset Clears PLC Mode Fail Alarm: ☐ Yes ☐ No ☐ N/A	PLC Mode Fails to Local Mode: ☐ Yes ☐ No ☐ N/A				
	SCADA Wireless Connection Works: ☐ Yes ☐ No ☐ N/A	SCADA Wired Connection Works: ☐ Yes ☐ No ☐ N/A				

PLC Mode Operation	*Pump Duty*	*Setpoint*	*Setpoint Level*	*Output Changes Pump Status*	*Duty Output Appears on HMI*
	Duty 1	Start	m	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
		Stop	m	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	Duty 2 ☐ N/A	Start	m	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
		Stop	m	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	Duty 3 ☐ N/A	Start	m	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
		Stop	m	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	Duty 4 ☐ N/A	Start	m	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
		Stop	m	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Winnipeg	**COMMISSIONING FORM** **PLC SYSTEM**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

PLC Settings		
	Program PLC Settings to Match Control Narrative.	Comments:
	Programming Applied to PLC: ☐ Yes ☐ No	
	PLC Programming by: Company Name	

Final Analysis			
	Returned to Service:	☐ Yes ☐ No	Comments:
	Monitoring / Further Inspection Required:	☐ Yes ☐ No	
	Repair / Replacement Required:	☐ Yes ☐ No	

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

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Winnipeg	**COMMISSIONING FORM** **UNIT HEATER**	Page 1 of 2 Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

Unit Heater Location & Data	Heater Equipment No.		Heater Location:	Fed From:	
	Drawings:	Single Line:	Mech. Schedule:	Schematic:	☐ N/A
	Unit Heater Ratings:	Manufacturer:	Model:	Serial #:	
		Power: kW	Rated Voltage: VAC	Full Load Amps: A	☐ 1-Phase ☐ 3-Phase

Visual Inspection / Cleaning	Unit Heater Lamacoid Installed: ☐ Yes ☐ No	Visual Signs of Overheating: ☐ Yes ☐ No
	Power Cables Labelled: ☐ Yes ☐ No	Appropriate Breaker / Fuse Size Installed: ☐ Yes ☐ No
	Cleanliness: ☐ Good ☐ Acceptable ☐ Poor	Heater Properly Installed: ☐ Good ☐ Acceptable ☐ Poor
	Power Connection: ☐ Good ☐ Acceptable ☐ Poor	Ground Connection: ☐ Good ☐ Acceptable ☐ Poor
	Remote Thermostat Installed: ☐ Yes ☐ No ☐ N/A	Remote Thermostat Cable Labelled ☐ Yes ☐ No ☐ N/A
	Cables Supported Appropriately: ☐ Yes ☐ No	Equipment Cleaned: ☐ Yes Photograph Taken: ☐ Yes
	Comments:	

Heater Electrical Testing

Test Preparation: Setup: Source: ☐ Isolated ☐ Power Cable ☐ Disconnected ☐ Connected

Note: Approval of City's Representative is required, prior to leaving cables connected during the test.

WARNING: DISCONNECT ALL FIELD POWER CABLES FROM MOTOR PRIOR TO TEST.

Test	**Test Voltage**	**Insulation Resistance (MΩ)**			Ground all phases not under test!
		Phase A	**Phase B**	**Phase C**	
Line to Ground	VDC				**Test Summary** ☐ Test Passed ☐ Test Inconclusive Further Investigation Required. ☐ Test Failed

Test	**Tester**	**Resistance (μΩ)**		
		Phases A-B	**Phases B-C**	**Phases C-B**
Heating Element	Fluke Meter			

Comments:

Full Load Testing

TESTING: HEATER TO BE RUN FOR FIVE (5) MINUTES UNDER FULL LOAD PRIOR TO RECORDING VALUES.

Temperature	Turn On Setpoint: °C		Actual Turn On Setpoint: °C		
Heater Measured Current	Phase A A		Phase B A		Phase C A

Comments:

Winnipeg	**COMMISSIONING FORM** **UNIT HEATER**	Page 2 of 2
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Final Analysis				
	Returned to Service:	☐ Yes	☐ No	Comments:
	Monitoring / Further Inspection Required:	☐ Yes	☐ No	
	Repair / Replacement Required:	☐ Yes	☐ No	

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

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Winnipeg	**COMMISSIONING FORM** **VARIABLE FREQUENCY DRIVE**	Page 1 of 4
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Project Contact		
	General Contractor:	Project Manager:
	Consultant:	Contract Administrator:
	City of Winnipeg	Consulting Project Manager:

VFD Location & Data								
	VFD Equipment No.			VFD Location:			Downstream Load.	
	Drawings:	Single Line:		Schematic:			Connection:	
	VFD:	Manufacturer:		Model:			Serial #:	
		Power Rating:		Rated Voltage: VAC		Current Rating: A	Control Voltage:	VAC
	Circuit Protection:	☐ Breaker ☐ Fuse	Rating: A	Inst. Setting: A		Manufacturer: Model:		
	Line Reactor:	☐ Installed ☐ N/A	Rating:			Manufacturer: Model:		
	Harmonic Filter:	☐ Installed ☐ N/A	Rating:			Manufacturer: Model:		
	Load Reactor:	☐ Installed ☐ N/A	Rating:			Manufacturer: Model:		
	Bypass Contactor:	Type: ☐ NEMA ☐ IEC ☐ N/A	Manufacturer:			Model:		
			NEMA Size: ☐ N/A			IEC Rating: A ☐ AC-3 ☐ AC-4		
	Bypass Overload Protection:	☐ Thermal ☐ Electronic ☐ Not Applicable	Class: ☐ 10 ☐ 20 ☐ 30 ☐ Unknown	Setting / Rating: A		Manufacturer: Model:		
	Current Transformer:		Ratio:			Type:		
	Control Power Transformer:		Size: VA	Secondary Voltage: V		Primary Fuse: A	Secondary Fuse:	A

Motor Data				
	Equipment Tag:	Power: kW / HP		Voltage: VAC
	Full Load Amps: A	Service Factor:	Inverter Duty Rated: ☐ Yes ☐ No	Insulation Class:

Visual Inspection / Cleaning						
	VFD Lamacoid Installed:	☐ Yes ☐ No		Visual Signs of Overheating:	☐ Yes ☐ No	
	Power Cables Labelled at Both Ends:	☐ Yes ☐ No		Control Cables Labelled at Both Ends:	☐ Yes ☐ No	
	Cleanliness:	☐ Good ☐ Acceptable ☐ Poor		Power Cable Connections:	☐ Good ☐ Acceptable ☐ Poor	
	Control Cable Connections:	☐ Good ☐ Acceptable ☐ Poor		Elect./ Mech. Interlocks:	☐ Good ☐ Acceptable ☐ Poor	
	Ground Connections:	☐ Good ☐ Acceptable ☐ Poor		Contactor Condition:	☐ Good ☐ Acceptable ☐ Poor	
	Door Mechanical:	☐ Good ☐ Acceptable ☐ Poor		Contact Alignment:	☐ Good ☐ Acceptable ☐ Poor	
	Verify Bypass O/L element is correctly sized for the load:	☐ Yes ☐ No ☐ N/A		Exercised Circuit Breaker / Disconnect:	☐ Yes ☐ No	
	Cables Supported Appropriately:	☐ Yes ☐ No		Equipment Cleaned: ☐ Yes	Photograph Taken: ☐ Yes	
	Comments:					

Winnipeg	**COMMISSIONING FORM** **VARIABLE FREQUENCY DRIVE**	Page 2 of 4
		Equipment Tag:

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

Contact / Pole Measurements	**Test**	**Resistance (μΩ)**			**Test Summary**
		Phase A	**Phase B**	**Phase C**	☐ Test Passed ☐ Test Inconclusive Further Investigation Required. ☐ Test Failed
	Harmonic Filter Contactor Contact				
	Bypass Contactor Contact				
	Breaker / Disconnect				
	Comments:				

Insulation Resistance Test

Test Preparation:
Setup:
Source: ☐ Isolated
Contactor: ☐ Open

Cable Destination / Load:
☐ Disconnected
☐ Connected with Load Isolated

Note: Approval of City's Representative is required, prior to leaving cables connected during the test.

WARNING: DISCONNECT ALL POWER CABLES FROM VFD MODULE AND CAPACITORS, AND DISCONNECT ALL CONTROL POWER FUSES PRIOR TO TEST.

Test	**Voltage**	**Insulation Resistance (MΩ)**			Ground all phases not under test!
		Phase A	**Phase B**	**Phase C**	
VFD Line to Ground	1000 VDC				
VFD Load to Ground	1000 VDC				
VFD Line to Load	1000 VDC				**Test Summary** ☐ Test Passed ☐ Test Inconclusive Further Investigation Required. ☐ Test Failed
Harmonic Filter Contactor Line to Ground	1000 VDC				
Harmonic Filter Contactor Load to Ground	1000 VDC				
Harmonic Filter Contactor Line to Load	1000 VDC				
Bypass Contactor Line to Ground	1000 VDC				
Bypass Contactor Load to Ground	1000 VDC				
Bypass Contactor Line to Load	1000 VDC				

Comments:

Full Load Operational Testing

Ramp Up Time	Specified:	sec		Actual:	sec	
Ramp Down Time	Specified:	sec		Actual:	sec	
Motor Measured Current	Phase A	A	Phase B	A	Phase C	A
VFD Displayed Current	Phase A	A	Phase B	A	Phase C	A

PLC HMI Screen Displayed Motor Current: A

Ammeter Current in Bypass Mode: ☐ Yes ☐ No ☐ N/A

Potentiometer Adjusts Speed in Manual Mode: ☐ Yes ☐ No

Potentiometer Adjusts Speed in Local Auto Mode: ☐ Yes ☐ No

Operating Modes	*Mode Description*	*Forward Run Start & Stop*	*Reverse Run Start & Stop*
	VFD Manual Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	VFD Automatic Mode – PLC Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	VFD Automatic Mode – Local Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	Bypass Manual Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	Bypass Automatic Mode – Local Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Comments:

Winnipeg	**COMMISSIONING FORM** **VARIABLE FREQUENCY DRIVE**	Page 3 of 4
		Equipment Tag:

Project	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

VFD Settings		
	Program VFD Settings to Match Setting Letter.	Comments:
	Settings Applied to VFD: ☐ Yes ☐ No	
	VFD Setting Letter File:	

VFD & PLC Control Signals

Verify Control Signals Between VFD and PLC		Comments:
Test Preparation:	Test physical signals rather than installing jumpers for signals	
Field Wires Labelled at Both Ends: ☐ Yes ☐ No		

Discrete Signals

Signal Description	*Pilot Light Illuminates*	*Signal Received at PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*
Ready	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
VFD Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Bypass Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Manual Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Auto Mode	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Forward Run	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Reverse Run	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
VFD Fault	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Bypass Fault	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Vibration Lockout	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Analog Signals

Signal Description	*Measured Signal*	*Signal received At VFD / PLC Card*	*Signal Appears on HMI Screen*	*SCADA Can See Signal*
Speed Input	mA	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Speed Reference	mA	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Motor Current	mA	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Final Analysis			
	Returned to Service: ☐ Yes ☐ No		Comments:
	Monitoring / Further Inspection Required: ☐ Yes ☐ No		
	Repair / Replacement Required: ☐ Yes ☐ No		

Project			
	Facility:	Project Name:	
	Area:	RFP No.	Tender No.

	Company	Name	Signature	**Date** (yyyy/mm/dd)
General Contractor Representative				
City Representative				

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