	Zinnipeg			СС	OMMISSI	ONIN	IG FC	DRI	М			Page	Page 1 of 2		
Winn	upeg				AIR CON	NDITI	ONE	R				Equip	oment Tag	g:	
ect	Facility:			Pr	oject Name:										
Project	Area:			RF	FP No.					Tend	der No).			
Project Contact	General Co	ntractor:			Project	-									
Con	Consultant: City of Winr	inea			Contract Administrator: Consulting Project Manager:										
		lipeg													
ner ata	A/C Equipme	ent No.			A/C Location:				Fed Fi	rom:					
Air Conditioner Location & Data	Drawings:	Single Li	ne:		Mech. Schedule:				Schem	natic:		[□ N/A		
Con	A/C	Manufact	turer:		Model:				Serial	#:					
Air	Air Conditioner Lamacoid Installed:				Voltage:	V	AC F	Full	Load Amps:		А	□ 1	I-Phase	□ 3	-Phase
						No	Visual Signs of Overheatin			ating:			□ Yes		□ No
	Power Cabl	 □ Yes			Appropriate Breaker / Fuse Size Install				stallec	 t:□Yes		 □ No			
ning			ctless Installation:						Ton Size Inst						
Clea	Cleanliness: Good Acceptable Poor A/C Unit Properly							Properly Insta	lled:] Goo	d 🗌 Acc	eptable	e 🗌 Poor	
tion /	Power Conr	nection:	d 🗌 Acc	eptable	Poor	Groun	d Co	onnection:						e 🗌 Poor	
Visual Inspection / Cleaning	Fully Function	onal Contr	oller: Good	d 🗌 Acc	eptable	Poor	Contro	oller	Display Work	KS:] Goo	d 🗌 Acc	eptable	e 🗌 Poor
ual In	Remote Controller Installed: Yes No N/A Remote Controller Cable Labelled: Yes No N/A														
Vis	Cables Sup	ported App	🗌 Yes	🗌 No		Equipr	quipment Cleaned: 🗌 Yes Pho			hotogr	aph Take	n:	🗌 Yes		
	Comments:														
	Test Preparation	: Sou	Setup: irce: 🔲 Isolate	ed D	Power Cab Disconnect Connected	ted			Note: Ap prior to le						
	WARNING:	DISCON	NECT ALL FIELI	D POWE	R CABLES	PRIOF	х то т	EST	Г.						
sting				_			Ins	ulat	ion Resistan	nce (N	1Ω)		Ground	all pha	ises not
al Te		Ie	est	Ie	est Voltage	Ph	ase A		Phase B	F	hase	С		nder tes	
ectric	Co	ontactor Li	ne to Ground		VDC										
er Ele	Co	ntactor Lo	ad to Ground		VDC								Test Sum	-	
Air Conditioner Electrical Testing	C	Contactor L	ine to Load		VDC								Test P Test Ir		sive
Conc					Tester			R	esistance (µ	Ω)			Furth Requ		stigation
Air		Te	est		Tester Phases A-B Phases B-C			Phases B-C	Ph	ases (C-B Test Failed				
		Heating	Element	F	luke Meter	Jke Meter									
	Comments:	Comments:													

<u> </u>		COMMISSIONING FORM		Page 2 of 2				
Winnij	peg	AIR CONDITIONER		Equipment Tag:				
oject	Facility:	Project Name:						
Pro	Area:	RFP No.	Tender No).				

	TES	TING: AIR COND	ITIONER TO	BE RUN FOR FIVE (5) MINUT	ES POINT PRIC	R TO RECORD	ING VALUES.			
	Tem	perature		Turn On Setpoint:	°C	Actual Turn O	n Setpoint:	°C		
ing		Device		Measured Current						
estir	sp	Device		Phase A Phase B			Phase C			
L land	A/C Loads	Compressor	🗆 N/A	А		А	А			
eratio		Fan 🗌 N/A		А		А		А		
dO be		Heater	□ N/A	А		А		А		
-ull Load Operational Testing	or	Descriptic	on	Controller Contact Status	Contact	or Status	A/C Status			
щ	Contactor	Oraclaster		Closed	Closed	Opened	Running	Stopped		
	ပိ	Contactor	□ N/A	Opened	Closed	Opened	Running Stopped			
	Com	iments:	1							

is	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
Ar _	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

Winni								SIONI						Page	Э	1 o	f 3
Winni	peg				AU		ATIC	TRANS	SFER S	SWI	ГСН			Equi	pment T	ag:	
ect	Facility:					Proj	ect Na	ime:									
Project	Area:					RFF	FP No. Tender No.										
+ #	General Contr	actor:					Project Manager:										
Project Contact	Consultant:						Contract Administrator:										
Pr Co	City of Winnip	eg					Con	sulting Pr	roject Ma	inage	er:						
	ATS Downstre	amloa	4.				ATS Location:				Sectio	n No			∏ N/A		
	Sources:	Source	1						eraencv):							□ Yes	
		(Norma	,														
	Drawings:	Single I					Mode						Loop: Serial	<i>#</i> .			
	ATS:	Manufacturer: Power Rating:		Rated			VAC	Cu	rrent Ratin		A	1	ontrol V	oltago:	VAC		
ata	Source 1	roweri	Nating.			Raleu	voltage	.	VAC	Cu	Manufact	-	A			ollage.	VAC
on & Do	(Normal) Circuit		Breaker Ratir		ng:	А	١	Inst. Setting:		A	Model:	Bkr Location:					
catic	Protection: Source 2										Manufact	uror.					
ATS Lo	(Emergency) Circuit Protection:	🗌 Brea] Breaker Ra		ng: A		N .	Inst. Setting:		A	Model:				Bkr Lo	cation:	
	Line 1				Manufa	cturer:					Model:						
	(Normal) Contactor:	Type: ☐ IEC ☐ N/A			NEMA S	Size:				I/A	IEC Ratin	g:		А	AC-	3 [] AC-4
	Line 2	-			Manufa	cturer:	Model:										
	(Emergency) Contactor:	Type:	IEC		NEMA Size:					I/A	IEC Ratin	g:		А	🗌 AC-	з [] AC-4
	Control Powe	r Transf	former	Size	:	VA Se	econdary Voltage: V Primary Fuse:				A Secondary Fuse: A						
	ATS Lamacoid	d Installe	ed:			□ Yes	sП	No	Visual S	Signs	of Overhe	ating:				□ Yes	□ No
D	Power Cables	Labelle	d at Bo	th En	ds:		s 🗆	No		<u> </u>	es Labelle	0		nds:		 □ Yes	 □ No
anin	Cleanliness:				Good [] Accep	otable	Poor	Power (Cable	Connectio	ons:] God	od 🗌 A	cceptabl	e 🗌 Poor
/ Cle	Control Cable	Connec	tions:		Good [Accep	otable	Poor	Elect./ N	Nech	. Interlocks	6:] Goo	od 🗌 A	cceptabl	e 🗌 Poor
tion	Ground Conne	ections:			Good [Accep	otable	Poor	Contact	tor Co	ondition:] Goo	od 🗌 A	cceptabl	e 🗌 Poor
pect	Door Mechani	cal:			Good [] Accep	otable	Poor	Contact	Alig	nment:] Goo	od 🗌 A	cceptabl	e 🗌 Poor
Visual Inspection / Clean	Verify Contact for the Source		correct	y Siz	ed	🗌 Yes		D □ N/A	Verify S Installed	ource d and	e & Load F I Labelled	hases	s are C	Correc	ctly	🗌 Yes	🗌 No
Visı	Cables Suppo	rted App	oropriat	ely:		🗌 Yes	🗌 No	C	Equipm	ent C	leaned:	ΠY	es F	Photo	graph T	aken:	🗌 Yes
	Comments:												-				
									R	esie	tance (uO	<u>, </u>			Test S	ummary]
le ts			Tes	st				Resistance (μΩ) Phase A Phase B		Phase C Test Passed							
Contact / Pole Measurements	S	ource 1	(Norma	l) Lin	e to Loa	d								-	 Fur		usive stigation
su		Source 1 (Normal) Line to Load Source 2 (Emergency) Line to Load												Re	quired.		

Comments:

<u> </u>	\sim			COMMIS	SIONING FC	ORM	1	Page	2 of 3	
Winni	pèg		AU	TOMATIC	TRANSFER	SWITCH		Equipment Tag:		
ect	Facility:			Project Na	me:					
Project	Area:			RFP No.			Tender No.			
	Test Preparation:	Dise Cor	a 1 (Normal) Cable: connected nnected with irce 1 Isolated	Disconr		Discon Conne	le: nected cted with solated	ted with prior to leaving		
Test	WARNING:	DISCON	INECT ALL POWER	IECT ALL CONT	ROL POWE	R FUSES	PRIOR TO TEST.			
		Та	o.t.	Valtaria	Insula	ation Resistanc	æ (MΩ)	Gi	ound all phases not	
ista		Те	St	Voltage	Phase A	Phase B	Phase C	;	under test!	
Ilation Resistance	Source 1	(Norma	l) Line to Ground	1000 VDC				Test	Summary	
tion	Source 2 (I	Emergen	cy) Line to Ground	1000 VDC				ТП	est Passed	
rla		Lood to	Cround					Ппт	est Inconclusive	

Insulat		Load to Ground	1000 VDC						_		conclusi	
h		Source 1 (Normal) Line to Load	1000 VDC							Requir	r Investi ed.	gation
	S	ource 2 (Emergency) Line to Load	1000 VDC							Fest Fa	iled	
	Comments:											
	Automatic Mode Switches Source 1 to Source 2 Yes No (via Source 1 Power Disruption):						ode Switcl I Power R	hes Source 2 estored):	2 to Sour	ce 1] Yes	🗌 No
Testing	se	Mode Description		Sourc	e Powers	Load	ATS Inc	dicator	Light IIIu	uminates		
I Tes	Modes	Automatic Mode - Source 1 (Utility)		Yes	🗌 No	□ N/A	ΠY	es	🗌 No	🗌 N/A		
Operational		Automatic Mode - Source 2 (Emerger		Yes	🗌 No	□ N/A	□ Y	es	🗌 No	🗆 N/A		
erati	perating	Normal Test Mode - Source 1 (Utility)		Yes	🗌 No	□ N/A	ΠY	es	🗌 No	🗆 N/A		
do	Ō	Emergency Test Mode - Source 2 (Emergency)				Yes	🗌 No	□ N/A	□ Y	es	🗌 No	🗌 N/A
	Comments:											

	Program ATS Settings to Match Setting Letter.		Comments:		
	Settings Applied to ATS: Yes No.	C			
sß	ATS Setting Letter File:				
Settings	Source 1 (Normal) Dropout Voltage:	V	Source 1 (Normal) Pickup Voltage:		V
s S	Source 2 (Emergency) Dropout Voltage:	V	Source 2 (Emergency) Pickup Voltage:		V
ATS	Transfer to Source 2 (Emergency) Time Delay:	sec.	Retransfer to Source 1 (Normal) Time Delay:		sec.
	Source 1 to 2 Closed Transition Time: sec.	🗆 N/A	Source 2 to 1 Closed Transition Time:	sec.	🗆 N/A
	Source 2 (Emergency) Warm-Up Time Delay:	sec.	Source 2 (Emergency) Cool-Down Time Delay:		sec.

s	Verify	/ Control Signals Betw	een ATS and PLC		Comments:						
Signals	Test		/sical signals rather than in for signals	nstalling							
	Field	Wires Labelled at Bot	h Ends: 🗌 Yes 🛛								
C Control	ignal	Signal Description	ATS Pilot Light Illuminates	0	al Received PLC Card		nal Appe HMI Scre		SCADA	Can Se	e Signal
& PLC	ete Si	On Source 1 Power	□Yes □No □N/A	🗌 Yes	□No □N/A	🗌 Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗌 N/A
ATS 8	scr	On Source 2 Power	□Yes □No □N/A	🗌 Yes	□ No □ N/A	🗌 Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗆 N/A
A	ä	ATS Alarm	□Yes □No □N/A	🗌 Yes	□ No □ N/A	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A

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COMMISSIONING FORM AUTOMATIC TRANSFER SWITCH 3 of 3

Equipment Tag:

Page

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

	Step	Description	Res	ult
	1	ATS in Source 1 (Normal) Position with Source 1 Energized. ATS indicates Source 1 (Normal) available and Source 1 (Normal) position status is provided.	Pass	🗌 Fail
	2	Power down (or isolate) Source 1 (Normal). ATS indicates Source 1 (Normal) is not available.	Pass	🗌 Fail
	3	Source 2 (Emergency) start signal provided.	Pass	🗌 Fail
	4	Source 2 (Emergency) starts. ATS indicates Source 2 (Emergency) available and transfers to Source 2 (Emergency) after appropriate delay. Source 2 position status is displayed.	Pass	🗌 Fail
ting	5	Power up (or reconnect) Source 1 (Normal). ATS indicates Source 1 (Normal) is available and delay timer starts before transfer back to Source 1 (Normal). ATS continues to indicate Source 2 (Emergency) position status.	Pass	🗌 Fail
Functional Testing	6	Timer expires and ATS transfers to Source 1 (Normal). ATS indicates Source 1 (Normal) position status.	Pass	🗌 Fail
nction	7	Source 2 (Emergency) Stops after cool-down timer expires.	Pass	🗌 Fail
Fur	8	Ensure loads are isolated such that a phase loss will not damage equipment. Simulate a Source 1 (Normal) phase loss condition and verify the ATS starts Source 2 (Emergency) Generator and transfers to Source 2 (Emergency).	Pass	🗌 Fail
	9	Reinstate the lost phase on Source 1 (Normal) and verify that ATS transfers back to Source 1 (Normal) after the appropriate delay.	Pass	🗌 Fail
	10	Manually start Source 2 (Emergency) and perform a manual transfer to Source 2 (Emergency).		🗌 Fail
	11	Perform a manual transfer back to Source 1 (Normal).	Pass	🗌 Fail
	Test	Summary Test Passed Test Inconclusive - Further Investigation Required Test Failed		

 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				

Topological Facility: Project Name: Area: RFP No. Tender No. Tender No. Vertical Contractor: Project Manager: Consultant: Contract Administrator:	Equipment Tag:		
General Contractor: Project Manager: Consultant: Contract Administrator:			
General Contractor: Project Manager: Consultant: Contract Administrator:			
Consultant: Contract Administrator:			
Consultant: Contract Administrator:			
City of Winnipeg Consulting Project Manager:			
CSTE Downstream Load: Equipment No. Locatio			
g Drawings: Single Line: Grounding: Site Pla			
Manufacturer: Model: Serial #	<i>t:</i>		
grounding: Drawings: Single Line: Grounding: Site Pla orget Manufacturer: Model: Serial # work Mounting Type: Floor Wall Metering Type: CTs & PTs Meter W/Meter Meter Only Remote Wain Breaker Inst Manufacturer:	e Enclosure: 🗌 Yes 🗌 No		
Rated Current: A Rated Voltage: VAC Phases: 1-Ph 3-Ph S	hort-Circuit Rating kAIC		
Main Breaker Manufacturer:	rer:		
O Disconnect Switch Rating: A Inst. A Type: N/A N/A Model:			
Service Size: kVA Voltage: VAC Phases: 10 0 30 Rated Service Current: A Service Transform	mer: Pole Padmount		
Service Size. KVA Phases: 10 30 Rated Service Current. A Transform Side Cabling Size and Type: (ie 2 x 4C, 350 kcmil Teck90) CSTE Load Side Cabling: Bottom Side / Rear CSTE Doad Load: CSTE Load Side A (CEC C22.1) CSTE Gi	Downstream		
	CSTE Ground Cable Size & Type:		
CSTE Lamacoid Installed:	Yes No		
Power Cables Labelled at Both Ends: Yes No Phases Labelled Inside Enclosure:	🗌 Yes 🛛 No		
Power Cables Labelled at Both Ends: Yes No Phases Labelled Inside Enclosure: Cleanliness: Good Acceptable Poor Power Cable Connections: Image: Cleanliness:	Good Acceptable Poor		
	Good Acceptable Poor		
Ground Connections: Good Acceptable Poor Bus Bars and Insulators:	Good Acceptable Poor		
Main Disconnect: Good Acceptable Poor Service Entrance Enclosure: Good Ground Connections: Good Acceptable Poor Bus Bars and Insulators: Good Door Mechanical: Good Acceptable Poor Exercised Circuit Breaker / Disconne Cables Supported Appropriately: Yes No Equipment Cleaned: Yes Pho			
Cables Supported Appropriately: Yes No Equipment Cleaned: Yes Pho	otograph Taken:		
Comments:			
	Teet 0		
Resistance (μΩ)	Test Summary		
Phase A Phase B Phase C	Test Inconclusive		
	Test Inconclusive Further Investigation Required. Test Failed		

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COMMISSIONING FORM CUSTOMER SERVICE TERMINATION END

2 of 2

Equipment Tag:

Page

ject	Facility:
Pro	Area:

Project Name:

RFP	No
REE	INO.

Tender No.

Resistance Test	Test Setup: Preparation: Source: Isolated Contactor: Open	Cable Dest Disconnect Connected Isolated			Note: Approval of City's Representative is required, prior to leaving cables connected during the test.			
	WARNING: DISCONNECT ALL POWER C CONTROL POWER FUSES P		BLES FROM VFD MODULE AND CAPACITORS, AND DISCONNECT ALL OR TO TEST.					
	Test	Valtaria	Insulat	tion Resistanc	e (MΩ)	Ground all phases not		
	Test	Voltage	Phase A	Phase B	Phase C	under test!		
	Interior Bus Bar / Cabling to Ground	1000 VDC				Test Summary		
Insulation	Main Disconnect Line to Ground	1000 VDC				Test Passed		
	Main Disconnect Load to Ground	1000 VDC				Further Investigation Required.		
	Main Disconnect Line to Load	1000 VDC				Test Failed		
	Comments:	L						

ler gs	Adjust Settings to Match Single Line Diagram	Comments:
reak	Settings Applied to Breaker: Yes No	
Ξ.Ϋ	Single Line Diagram:	

	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
- A	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

					COMMISSIONING FORM					je 1 of	2
Winni	Winnipèg			DISCO	NNEC	T SWIT	CH		Equ	ipment Tag:	
Project	Facility:	Project N	ame:								
Pro	Area:			RFP No.				Tende	r No.		
ಕರ	General Contractor: Project Manager:										
Project Contact	Consultant:			Co	ntract A	dministrato	r:				
L O	City of Winn	ipeg		Co	nsulting	Project Ma	anager:				
_	Disconnect E	Equipment	No.	Loc	ation:			Fe	ed From:		
ation	Drawings:	Single Lir		Sch	ematic:			C	onnectio	n:	
Loca		Manufact	urer:	Мо	del:			Se	erial #:		
Disconnect Location & Data	Disconnect Ratings:	Ampacity: Withstand		ated Voltag	je:	VAC	No. of Poles:	I	Auxiliary	/ Contacts: 🗌 Ye	es 🗌 No
Disc	Fuse Ratings:	🗌 Installe	ed 🗌 N/A 🛛 R	ating:	ting:		А Туре:		Manufacturer: Model:		
Switchblade & Fuse Visual Inspection / Cleaning Measurements		es Labelleo azardous L Mechanic witchblade ported App Switchblad	d: ocation: Good al: Good Operation: Coperation:	Acceptable Yes 🗌 No Yes 🗌 No		Any Exp All Fuse or Enclosu or Ground A Auxiliar Equipm	Signs of Overhe posed Energize e Sizes Match I ure Cover Secu Connection: y Contacts Cha ent Cleaned: Resistance (μΩ Phase B	ed Metala Drawings Ired: ange Sta Yes	:: Go Go te:	☐ Yes ☐ Yes ☐ Yes pod ☐ Acceptable ☐ Yes graph Taken: Test Summary ☐ Test Passed ☐ Further Inve: Required. ☐ Test Failed	e 🗌 Poo
Insulation Resistance Test	Test Preparation WARNING:	E Cor Isolate S	: connected inected with Source Is ource and Load Cabli est	olated	Test. U	ected with L se 500 VD Inst	lation Resista	require during ated and ance (MS	d, prior t the test. 1000 VI 2)	l of City's Represe o leaving cables o DC for > 300 V rat Ground all pha under te	ed.
n Resist	Disco	onnect Line	Side to Ground	,	VDC	Phase A	Phase B		ase C	Test Summary	
sulatior	Disco	onnect Loa	d Side to Ground	,	VDC					 Test Passed Further Invest Required. 	
ü	Disconnect Line to Load			,	VDC					Test Failed	

Comments:

Winnij	peg		COMMISSIONING FORM DISCONNECT SWITCH	Page 2 of 2 Equipment Tag:		
ject	Facility:		Project Name:			
Proj	Area:		RFP No.	Tender No		

	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final nalys	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
~	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

<u> </u>					СОМ	MISSION	NING F	OR	м			Pag	je	1 of 2
Winni	ipèg				DRY TY	PE TR	ANSFO	ORM	ER	2		Equ	ipment Tag	:
ect	Facility:		1		Project	Name:								
Project	Area:				RFP N	0.					Tender No).		
						Due le st Me								
Project Contact	General Conti	ractor:				Project Ma	0	otor						
Pro	Consultant: City of Winnip					Consulting				<i>.</i>				
		ey				Jonsulting	FIUJECI	IVIALIA	aye	1.				
	Transformer E	quipmer	nt No.		L	ocation:					Single	e Line	e Dwg:	
on 8		Manufa	acturer:		C	CAT / Mod	el No.				Serial	#:		
ocati	Transformer	Primary	/:	V	Secondar	y Voltage:	Ň	/	Rat	ing:	kVA] 1-Phase	3-Phase
ner Lc Data	Ratings:	Prima	ary Windi	ing (3-Ph)	Second	ary Windi	ng (3-Pl	า)		Winding M	laterial:	Ir	npedance:	Temp. Rise:
D E			ΠY	Y-Gnd		ΠY	□ Y-G	nd		-		r	%Z	°C
Transformer Location & Data	Transformer Taps:	□ Prin □ Sec □ N/A	ondary	Tap Setting	1 V	2	v	3	V	4 V	5	v	6 V	Tap Setting On V
Visual Inspection / Cleaning	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						eptable Poor N/A							
>	Comments:	nteu App	oropriate	iy. L		NU	Equ	ipmer	n C			ΠΟΙΟ	угарттакет	
st	Test Preparation: WARNING:		Disconne Connecte	ed with Sour			cables	conn	ecte	ed during th		tive is	s required, p	rior to leaving
e Tee	With the	Diocon				ONEICO				n Resistar				
ance		Wir	nding		Vo	Itage	Phas			Phase B	Phase	e C		tance to be d after 60 sec.
esist		Primary	to Groun	nd		VDC							Test Sum	mary
on R			y to Grou			VDC							Test P	-
Insulation Resistance Test) Second			VDC							Requir	
													Test F	ลแซน
	Comments:													
s	Returned to S	ervice:			☐ Yes	s 🗌 No	Comr	nents	:					
Final Analysis	Monitoring / F	urther Ir	spection	Required:	□ Yes	s 🗌 No	1							
An	Repair / Repla	acement	Require	ed:	🗌 Yes	s 🗌 No	1							

Winnij	peg						2 of 2 t Tag:
oject	Facility:		Project Name:				
Proj	Area:		RFP No.		Tender No		
	•	C ommonw	News		Ciamatuma		

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

Winni				CON	MISSI			ORM			Page		1 of 2	
Winni	peg				DUCT	HEA	ATER				Equip	ment Tag		
ect	Facility:			Proje	ect Name:									
Project	Area:			RFP	No.				Tei	nder No	lo.			
	General Cor	ntractor:			Project I	Mana	der:							
Project Contact	Consultant:				Contract Administrator:									
Ϋ́ς Ρ	City of Winn	ipeg			Consulti	ing Pi	roject N	lanager:						
	Hootor Equip	mont No			Heater	oooti	<u></u>			Fed F	rom:			
ata	Heater Equip												N1/A	
Duct Heater Location & Data	Drawings:	Single Lir								Scher				N/A
uct H ation	Duct Heater	Manufact	urer:	1	Model:					Serial	#:			
Loc	Ratings:	Power:	kW	Rated Vo	ltage:		VAC I	Full Load Amps	:	A	□ 1 [.]	-Phase	🗌 3-F	hase
		Flow Rate	e: L/s	Control V	oltage:		VAC	Stages:		S	SCR Co	ontrols:	to	V
	Duct Heater	Lamacoid	Installed:	🗌 Yes		No	Visual	I Signs of Overh	neating	g:		🗌 Yes		🗌 No
	Power Cable	es Labelle	d:	🗌 Yes		No	Appro	priate Breaker	/ Fuse	Size In	stalled	: 🗌 Yes		🗌 No
aning	SCR Contro	l Cables L	abelled:	🗌 Yes		No	SCR (Controls Proper	ly Inst	alled:		🗌 Yes		🗌 No
/ Cle	Cleanliness:		Good		table 🗌	Poor	Heate	r Properly Insta	lled:	Ľ] Good	d 🗌 Acce	eptable	Poor
Visual Inspection / Cleaning	Power Conn	ection:	🗌 Good		table 🗌	Poor	SCR (Controls Conne	ction:	٢] Good	d 🗌 Acce	eptable	Poor
uspec	Ground Connection: Good Ac				table 🗌	Poor	Groun	d Connection:		C] Good	d 🗌 Acce	eptable	Poor
sual I	Remote The	ermostat In	stalled:	□ Yes □	es 🗌 No 🗌 N/A Remote Thermostat Cable I			Labelle	d	🗌 Yes	🗌 No	□ N/A		
Vis	Cables Sup	ported App	propriately:	□ Yes □	Yes □ No Equipment Cleaned: □ \			Yes Photograph Taken: Ves						
	Comments:									•				
	1													
	Test Preparation:	: Sou	Setup: rce: Isolated	D	ower Cab isconnect onnected	ed						epresentat ected dur		
ŋ	WARNING:	DISCON	INECT ALL FIELD	POWER	CABLES	FROM	и мото	OR PRIOR TO	TEST	•				
estin		Te	est	Test	Voltage		Ins	ulation Resista	ance (ΜΩ)		Ground		
ical T					. enage	PI	hase A	Phase B		Phase			der test!	
Heater Electrical Testing		Line to	Ground		VDC							Гest Sum ☐ Test Pa	-	
tter E		Те	est	т	ester			Resistance	(μΩ)				conclusi	ve
Неа			531		ester	Pha	ises A-	B Phases B-	CP	hases	С-В	Furthe Requii	r Investi ed.	gation
		Heating	Element	Fluk	e Meter						0] Test Fa		
	Comments:								•		·			

			COMMISSIONING FORM	Page	2 of 2	
Winnij	Winnipèg		DUCT HEATER	Equipment Tag:		
oject	Facility:		Project Name:			
Proj	Area:		RFP No.	Tender No).	

	Temperature		Turn On Setpoint:	°C	Actual Turn On Setpoint	Actual Turn On Setpoint: °C				
bu	SCR Duty Point	SCR Volts		Duct Heater Measured Current						
l esting	SCK Duty Foint	SCR VOIS	Phase A	Pha	se B	Phase C				
	1	V	А		A	A				
	2	V	А		A	А				
operational	3	V	А		A	А				
5	4	V	А		A	А				
	5	V	А		A	А				

sis	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final nalys	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
- A	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

<u> </u>	/			Page	1 of 2	
Winnij	Vinnipèg EMERGENCY LIGHTING		Equipment Tag:			
oject	Facility:		Project Name:			
Proj	Area:		RFP No.	0.		

50	General Contractor:	Project Manager:
roje(onta	Consultant:	Contract Administrator:
ΞŬ	City of Winnipeg	Consulting Project Manager:

Lighting & Data	Battery Bank Location:		Battery Bank Equipment No.			Panel Feed: Circuit No.		Control Panel No.		Applicable Drawings:
	Battery Bank:	Manufac	cturer:			Catalog No.				Serial #:
<u>ح</u> ح		Input Vo	ltage: \	AC	Output	Voltage:	VDC	Wattage:	N	Internal Lamp Qty:
Emergenc Locatior		Manufacturer:			Catalog No.		Remote Fixtures Qty:			
Eme	Remote Fixtures:	Input Vo	ltage: \	DC	Input C	Current:	А	Lamp Wattage:	N	Fixture Lamp Qty:
		Installec	Locations:							

	Identification Lamacoids Instal	led:	🗌 Yes	🗌 No	Lamps Properly Aimed	1:		🗌 Yes	🗌 No
ing	Visual Signs of Moisture:		🗌 Yes	🗌 No	All Lamps Properly Op	erate:		Yes	🗌 No
Cleaning	Dry Well Remote Fixtures Moisture Proof Rated:		🗌 Yes 🗌 No	□ N/A	Valve Chamber Remote Moisture Proof Rated:	te Fixtures		🗌 Yes 🗌 No	□ N/A
Visual Inspection /	Wet Well Remote Fixtures Explosion Proof Rated:		🗌 Yes 🗌 No	□ N/A	Comminutor Chamber Explosion Proof Rated		ixtures	🗌 Yes 🗌 No	□ N/A
spe	Cleanliness:	Good 🗌	Acceptable	Poor	Cable Connections:		Good 🗌	Acceptable	Poor
al In	Ground Connections:	Good	Acceptable	Poor	Connections Properly	Sealed:	Good	Acceptable	Poor
Visu	Cables Supported Appropriate	ly:	Yes	🗌 No	Equipment Cleaned:	🗌 Yes	Photogra	aph Taken:	🗌 Yes
	Comments:								

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

		gency Lights Turn On and Off ☐ Yes ☐ No natically in Normal Mode:	Emergency Lights Turn On in Test Mode:				
Testing	des	Mode Description	Emergency Lights On	Time For Emergency Lights to Turn On			
al Te	Modes	Normal Mode – Normal Station Operation	No	N/A			
Operational	rating	Normal Mode – Battery Bank Power Supply Failure	🗌 Yes 🗌 No	sec			
pera	Opera	Normal Mode – Individual Normal Lighting Circuits Fail	🗌 Yes 🗌 No	sec			
ō	0	Test Mode	Yes No N/A	sec			
	Comr	nents:					

			COMMISSIO	NING FORM		Page	2 of 2			
Winni	peg		EMERGENC	(LIGHTING	Equipment Tag:					
ect	Facility:		Project Name:							
Project	Area:		RFP No.		Tender No	nder No.				
	•									
	Returned to Service:		🗌 Yes 🗌 No	Comments:						

	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final 1alys	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
Ar	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

) O	innipeg						сом	MISSI	ONII		M		Page	1 of :	2
Winnij	peg						GENE	ERATO	DR D	DAMPE	RS		Equipme	nt Tag:	
ect	Facili	ty:					Projec	t Name:							
Project	Area:						RFP N	lo.		Tender No.					
+ #	Gene	ral Cont	tractor:					Project I	Mana	iger:					
Project Contact	Cons	ultant:						Contrac	t Adn	ninistrator					
r S	City c	of Winni	peg					Consulti	ng P	roject Mar	ager:				
	Chatia	n Mantil	ation					Generato					tral Danal		
ata	Station VentilationGeneralRoom(s) / Area(s)Equipr									D.		HVAC Cor Equip. No.	itroi Panei		□ N/A
Damper Actuators Location & Data	Drawi	ings:	HVAC P	&ID:			C	Control F	Panel	:		Dampers L	loop:		
tion	Room Installed: Equi						Equipme	nt No	Э.		Control Ty	pe: 🗌 Mo	odulating	On / Off	
oca		oustion	Manufac	turer:			C	Catalog	No.			Serial #:			
rs L		amper uator:	Power S	upply:	VA	C / VE	DC 1	Forque:			Nm	Runtime:		sec.	
lato	Control Input: VAC / VI				00 00	Control C	Dutpu	ıt:	VAC / VDC	Auxiliary S	witch Prov	rided: 🗌 Ye	s 🗌 No		
Actı			Room In	stalled:			E	Equipme	nt No	D.		Type:	🗌 Mo	odulating	On/Off
per		oustion amper	Manufac	turer:			C	Catalog I	No.			Serial #:			
am		uator:	Power S	upply:	VA	C / VI	DC 1	Forque:			Nm	Runtime:		sec.	
			Control I	nput:	VA	C / VE	00 00	Control (Dutpu	ıt:	VAC / VDC	Auxiliary S	witch Prov	ided: 🗌 Ye	s 🗌 No
	Damper Lamacoids Installed:								No	Damper	Actuator Lam	acoids Insta	lled:	☐ Yes	□ No
7			s Labelle		n Ends:		es		No		Cables Labelle			 □ Yes	 □ No
ction	Cleanliness:						ible 🔲	Poor	Power C	able Connecti	ions:	Good	Acceptable	Poor	
al Inspect Cleaning	Fully Functioning Actuators: Good Acceptable								Actuator	s Properly Ins			 Acceptable		
ll Ins Clea			nputs Wo				Acceptable Po				tor Outputs W			Acceptable	
Visual Inspection / Cleaning	Cable	s Supp	orted App					No 🗌	N/A Equipment Cleaned:			☐ Yes			
>	Comr	nents:													
			Air Damp bening Ti		uator			sec	Combustion Air Damper 1 Actuator sec					sec	
5			Air Damp bening Ti		lator			sec	Combustion Air Damper 2 Actuator sec					sec	
Operational Testing			Air Damp ntilation to			. [Yes	🗌 No			ir Damper 1 C ntilation to No			🗌 Yes	□ No
tional			Air Damp ntilation to				Yes	🗌 No			ir Damper 2 (ntilation to No			Yes	□ No
pera	s	Mode	Descriptio	on						Fail-Safe	Position	No Ventila	tion Rate	High Ventila	tion Rate
ō	Operating Modes	Combu	ustion Air	Damper	1 Open	Positic	on			Opened	Closed	%			%
	Combustion Air Damper 2 Open Position									Opened	Closed		%		%
	Comr	nents:													
	Adius	t Damo	er Actuat	or Setting	ns for De	mper	Balanc	ina	С	omments:					
per itor igs	Damr	•	ngs Appli					0	\dashv						
Damper Actuator Settings	- 01116		• • •				on Con			Anale	of Rotation Po	sitions	Auxili	arv Switch Po	sition
υĀΛ			ustion Ai r Actuato					CCW		Starting:	Endir	· _			
	<u>i </u>									5		-	1		

Q				CO	MMISSION	NING FORM		Page	2 of 2			
Winni	pèg			GE	NERATOR	DAMPERS		Equipme	ent Tag:			
ect	Facili	ty:		Pro	Project Name:							
Project	Area:			RF	P No.		Tender No).				
	Verify Damp	Control Signals	Between Gen	erator Contro	ller and	Comments:						
	Test F	Preparation: Tes	st physical sig opers for signa	nals rather that	an installing							
	Field	Wires Labelled at	t Both Ends:	🗌 Yes	🗌 No							
Actuator Input / Output Control Signals	te	Actuator	Signal Type	Measured Input Voltage	Measured Output Voltage	Output Received at PLC Card	Signal Ap on HMI So		SCADA Can See Signal			
	No Ventilation Rate	Generator Combustion Damper 1	□ 0 - 5V □ 0 - 10V □ On / Off	VDC	VDC	☐ Yes ☐ No ☐ N/A	🗌 Yes 🗌 No	⊃	☐ Yes ☐ No ☐ N/A			
/ Output C	No Ve	Generator Combustion Damper 2	□ 0 – 5V □ 0 – 10V □ On / Off	VDC	VDC	☐ Yes ☐ No ☐ N/A	🗌 Yes 🗌 No	D □ N/A	□ Yes □ No □ N/A			
Iput		Not Used										
stuator Ir	ate	Actuator	Signal Type	Measured Input Voltage	Measured Output Voltage	Output Received at PLC Card	Signal Ap on HMI So		SCADA Can See Signal			
Ac	High Ventilation Rate	Generator Combustion Damper 1	□ 0 - 5V □ 0 - 10V □ On / Off	VDC	VDC	☐ Yes ☐ No ☐ N/A	🗌 Yes 🗌 No	D □ N/A	☐ Yes ☐ No ☐ N/A			
	High V€	Generator Combustion Damper 2	□ 0 – 5V □ 0 – 10V □ On / Off	VDC	VDC	□ Yes □ No □ N/A	Yes 🗌 No	D □ N/A	Yes No N/A			

is.	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
1 2	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

Û					COM	IMIS	SIONII		RM				Page		1 of 4
Winni	peg					GE	NERA	FOR					Equipm	nent Tag:	
ect	Facility:				Proje	ct Na	me:								
Project	Area:				RFP I	No.					Ten	der No.			
Project Contact	General Con	tractor:					ect Mana	•							
Proj	Consultant:							ninistrator							
-0	City of Winni	peg				Consulting Project Manager:									
	Generator Do	wnstream	Load:		E	Equipr	ment No.					Locatio	on:		
	Drawings:	Single Li	ne:		G	Generator Loop: Gas						Gas D	etector	Loop:	
	Associated	Combust Damper			-							Gas Do Instrum	etector nent No		□ N/A
	Equipment:	Jipment: HVAC Supply Damper: Manufacturer:										HVAC Dampe	Return er:		
_		Manufac	turer:		Ν	Nodel	:					Serial a	#:		
Generator Location & Data	Generator:	Power R	ating:	kW kVA	Rated Vo	oltage):	VAC	Cu	rrent Ra	ating:	А	Power Efficier	Factor: ncy:	
Ition	Cenerator.	Engine R	RPM:		X"D Rea	actanc	ce:	%	Fue	~ _] Diesel		Battery	y Voltage:	VDC
r Loca	Alternator RPM: X'D F				X'D Rea	ctanc	e:	%	Тур	oe: L] Natura] Propa		No. of	Batteries:	
ierato	Engine:	Manufacturer:				/lodel Horse	: power		HF	5		Serial	#:		
Gei	Main Circuit Protection:	🗌 Break	Rating: □ Breaker Auxiliary □ Contacts: □				Settings: LINO Model			•					
	Load Bank Circuit Protection:	□ Break □ N/A	er	Rating: Shunt Trip:	A No Yes	No Adjustable Yes Manufacturer: Settings No Model									
	Generator Panelboard:	☐ Instal ☐ N/A	led	Rating:	V. A		No. of Circuits:			Manufa Model:	acturer:				
	Generator La	macoid Ir	nstalled:		Yes		🗌 No	Sufficien	t Co	oling Pi	rovided:			🗌 Yes	🗌 No
bu	Power Cable	s Labelleo	d at Both I	Ends:	Yes		🗌 No	Control (-			ds:	☐ Yes	🗌 No
eani	Cleanliness:		[Good [] Accepta	able	Poor	Power C	able	e Conne	ctions:] Good		able 🗌 Poor
10 / CI	Control Cable	e Connec	tions:	Good] Accepta	able	Poor	Elect./ M	ech	. Interlo	cks:] Good		able 🗌 Poor
Visual Inspection / Cleaning	Ground Conr	nections:	[Good] Accepta	able	Poor	Protectio	n B	reakers	Conditio	on: 🗌] Good		able 🗌 Poor
sper	Generator Int	ake Gas	Line: [Good] Accepta	able	Poor	Generate	or E	xhaust l	_ine:] Good		able 🗌 Poor
al In	Visual Signs	of Overhe	eating:	Ľ	Yes] No	🗆 N/A	Exercise	d Pr	rotectior	n Breake	ers:		☐ Yes	🗌 No
visu	Cables Supp	orted App	oropriately	r: [Yes] No		Equipme	ent C	Cleaned	: 🗌 Ye	es Pr	notograp	oh Taken:	🗌 Yes
	Comments:														
								D.	-	tanco /·	uO)		Т	est Summa	rv
on r ents			Test				Phas			tance (hase B	-	Phase C] Test Pass	-

	6	Test		u	•	,
u	ker ments	Test	Phase A Phase B Phase C □ Test Passed Inconclusive □ Test Failed			
8	reak	Main Circuit Protection Breaker				_
Prof	a s	Load Bank Circuit Protection Breaker				
	Me	Comments:				

Û		COMMISSIONING FORM	Page 2 of 4 Equipment Tag: Tender No.	2 of 4	
Winni	peg	GENERATOR		Equipment Tag:	
oject	Facility:	Project Name:			
Pro	Area:	RFP No.	Tender No).	

nected during the test.
ALL CONTROL POWER
Ground all phases not
under test!
Test Summary Test Passed Test Inconclusive Further Investigation Required. Test Failed
Test Failed
AL Te

Tot	al Run Time:	minutes	Generator Temperature Before Starting Testing:				°C		rature Upon etion of Testing	:	°C
Ra	mp Up Time		Specified:				sec	Actual:			se
Ra	mp Down Time		Specified:				sec	Actual:			se
Ge	nerator Measured	I Voltage	Phase A VA		.C Phase B		VAC	Phase C		VA	
Co	ntroller Displayed	Voltage	Phase A VA		C Phase B		VAC	Phase C		VA	
Ge	nerator Measured	l Current	Phase	А	А	F	hase B	А	Phase C		А
Co	ntroller Displayed	Current	Phase	А	А	F	hase B	А	Phase C		А
-	Automatic Mode Starts Generator (via Station Power Disruption):						Mode Stops n Power Res	Generator tored):		🗌 Yes	
Ma	nual Mode Starts		🗌 Yes	🗌 No		Detection Pro			🗌 Yes		
	mbustion Damper		en	🗌 Yes	🗌 No		ntilation Dam is Running:	pers Operate	When	🗌 Yes	
	Mode Descripti	on				G	enerator Rur	nning		oller Indica ator Runn	
les	Automatic Mode	e – Utility Po	wer Availab	le		🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	
Modes	Automatic Mode	e – Loss of U	tility Power			🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	
ating	Automatic Mode	e – Low Gas	Detection			🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	
Operating	Automatic Mode	e – High Gas	Detection			🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	
0	Manual Mode -	Low Gas De	etection			🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	
	Manual Mode – High Gas Detection					□ Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	

Wi	و nnip	Deg				СОМ	MISSIO					Page		3 of 4	1
	1	. 0					GENER	AIUN				Equip	oment Ta	g:	
+00	ACL	Faci	lity:			Projec	ct Name:								
		Area	3:			RFP	No.				Tender	No.			
		Prog	gram Generator Co	ontroller Setti	ngs to M	atch Se	tting Letter	. Comr	nents:						
ţ	le I	Sett	ings Applied to Co	ntroller:	🗌 Yes		No		1						
nera	tting	Con	troller Setting Lette	er File:											
e c	3 ů	Out	out Voltage:				VAC	Outpu	ut Freque	ncy					Hz
		Eng	ine Warmup Time:				sec.	Engir	e Cool D	own Time	:				sec.
Converter 8 DI C Control Signals	Controller Setting Letter File: Output Voltage: VAC Engine Warmup Time: sec. Verify Control Signals Between Generator Controller and PLC Test Preparation: Test physical signals rather than installing jumpers for signals			gnal Sho PLC Ca No No No		on	nal Appe HMI Scre No No No No		 Yes Yes Yes Yes 	Can Se No No No No No	e Signal N/A N/A N/A N/A N/A				
				er 🗌 Yes	□ No	□ N/A	Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	□ N/A

	Step	Description	Res	ult
	1	Set Generator in Auto Mode with Utility powering the Station. Ensure ATS is in Auto Mode.	Pass	🗌 Fail
	2	Verify Generator breaker and Load Bank breaker are both closed.	Pass	🗌 Fail
	3	Power down (or isolate) Utility power. Verify ATS sends a start signal to Generator.	Pass	🗌 Fail
	4	Generator starts and after appropriate delay, Generator is connected to power Station loads.	Pass	🗌 Fail
sting	5	Start a pump and ensure Generator can power the load.	Pass	🗌 Fail
nal Te	6	Verify Load Bank breaker has been opened by a shunt trip.	Pass	🗌 Fail
Functional Testing	7	Try starting additional pumps. If the generator is sized for powering more than one pump then verify Generator powers additional pumps. Otherwise verify that additional pumps are not capable of being started.	Pass	🗌 Fail
	8	Verify Generator displays phase voltages and currents for all powered loads and record values. Phase A Voltage: VAC Phase B Voltage: VAC Phase C Voltage: VAC Phase A Current: A Phase B Current: A Phase C Current: A	Pass	🗌 Fail
	9	Once the Wet Well has been pumped down, stop the pump(s) from running.	Pass	🗌 Fail
	10	Restore Utility power at the ATS.	Pass	🗌 Fail
	11	After transfer timer expires, verify ATS transfers back to Utility power source.	Pass	🗌 Fail

<u> </u>			COMMIS	SIONING FORM		Page	4 of 4
Winni	peg		GE	NERATOR		Equipment Tag:	
ect	Facili	ity:	Project Na	me:			
Project	Area:	:	RFP No.		Tender No.	Equipment Tag:	
	12	Verify ATS send	s cool down signal to Generator.			Pass	🗌 Fail
	13	After cool down	timer expires, verify Generator ha	s stopped running.		Pass	🗌 Fail
	14	Manually start G	enerator and perform a manual tra	ansfer on the ATS to the Generat	or	Pass	🗌 Fail
	15	Start a pump and	d ensure Generator can power the	e load.	Pass	🗌 Fail	
	16	Once the Wet W	ell has been pumped down, stop	the pump(s) from running.		Pass	🗌 Fail
	17	Perform a manua	al transfer on the ATS back to Util	ity power source.		Pass	🗌 Fail
	18	Verify ATS has b	been put back into Auto mode.			Pass	🗌 Fail
	19	Manually stop th	e Generator and put the Generato	or back into Auto mode.		Pass	🗌 Fail
	Test	Summary	est Passed est Inconclusive - Further Investig est Failed	gation Required			

Comments:

	Provide Final Generator E	Breaker Adjustable Sett	ings			
sbu	Trip Plug	Manufacturer:	Model:	Trip Plug Size:	А	
rator Setting	Long Time Settings	□ N/A	Pickup:	Time Delay:		
	Short Time Settings	□ N/A	Pickup:	Time Delay:		
Gene eaker	Instantaneous Settings	□ N/A	Pickup:	Time Delay:		
Bre	Ground Settings	□ N/A	Pickup:	Time Delay:		
	Comments:					

is	Returned to Service:	g / Further Inspection Required:	Comments:	
Final nalysi	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
- A	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

<u> </u>				CON	MISSIC	ONING	g foi	RM		Page	1 of 3
Winni	peg			H۷	AC COI	NTRO	DLLEI	R		Equipment Tag:	
ect	Facility:			Proje	ect Name:						
Project	Area:			RFP	No.				Tender No).	
	General C	contractor:			Project N	lanage	ər:				
Project Contact	Consultar	t:			Contract	Admir	nistrator	:			
Ϋ́Υ	City of Wi	nnipeg			Consultir	ng Proj	ject Ma	nager:			
	_									Control	
ta	HVAC Cor	troller Locat	ion:		Equipme	ent No.			-	Equip. No.	□ N/A
& Da	Drawings:	HVAC P8	۶ID:		Control P	Panel:			Damp	ers Loop:	
ation	Controlled Dampers:	Supply D Equipme		🗌 N/A	Return D Equipme	amper nt No.		□ N/A	Exhau Equip	ust Damper ment No.	□ N/A
Controller Location & Data	Controlled Heaters:	Heater N	0.	□ N/A	Heater N	0.		□ N/A	A Heate	er No.	□ N/A
trolle	HVAC	Manufact	urer:		Catalog I	No.			Serial	#:	
Cont	Controller	Power Ra	ating:	Power S	Supply:		VAC	Current Rating	g: A	Control Voltage	: VAC
	Control P	ower Transf	former: Size:	VA Se	condary Vo	oltage:		V Primary F	use:	A Secondary F	use: A
	HVAC Co	ntroller I am	acoid Installed: [Yes			/isual S	igns of Overhe	atina.	☐ Yes	□ No
~								Cables Labelle	•		
tion	Cleanline				table 🗌 F	-		Cable Connection			
Visual Inspection / Cleaning		tioning Con						er Properly Mou			
al In Clea	-		ammed: 🗌 Good [ts & Outputs Wo		 ☐ Good	
Visu	Cables Su	pported Ap	propriately:	Yes [N/A E	Equipm	ent Cleaned:	□ Yes F	hotograph Taken	n: 🗌 Yes
	Comment	s:									
	I						-				
		ccupied Ligh ilation Rate:	nt Switch Activates	□ Y	es 🗌 No	🗆 N/	/A Co	mments:			
		loor Temper ilation Rate:	ature Activates	□ Y	es 🗌 No	🗆 N/	/A				
esting	3	Detection A ilation Rate:		□ Y	es 🗌 No	🗆 N/	/A				
Operational Testing	Controller Rate to Lo	Changes From Ventilation	rom High Ventilation	Y 🗆 Y	es 🗌 No	🗆 N/	/A				
erati	Controller	Defaults to	Low Ventilation Rate	e: 🗌 Y	es 🗌 No	🗆 N/	/A				
do	ting	Mode	e Description	Sup	ply Dampe (0 – 100%		n	Return Dampe (0 – 100			amper Open 100%)
	Operating Modes	High V	entilation Rate		%	🗆 N/A	\	%	□ N/A	%	
	0	Low V	entilation Rate		%	🗌 N/A	1	%	🗌 N/A	%	b □N/A
	David	N/AO 0 -					Co	mments:			
oller gs			oller Settings to Mat		-						
Controller Settings		pplied to Co		es	🗌 No						
ပိိ	HVAC Co File:	ntroller Setti	ng Letter								

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Winnipeg

COMMISSIONING FORM HVAC CONTROLLER

2 of 3

Equipment Tag:

Page

ject	Facility:
Pro	Area:

Project Name:

Area:

RFP No.

Tender No.

	Verify Control Signals Between Controller and Field Devices			er and Field Devices	Comments:				
	Test F		ysical signals for signals	rather than installing					
	Field	Wires Labelled at Bot	h Ends:	🗌 Yes 🔲 No					
	Discrete 1 Input	Signal Description	State	State Description	Signal Appears on Controller Screen	Modulated 1 Output (0 – 100 %)	Modulated 2 Output (0 – 100 %)		
	Jisci 1 Inj		Low (0)		□Yes □No □N/A	% 🗌 N/A	% 🗌 N/A		
		Not Used	High (1)		□ Yes □ No □ N/A	% 🗌 N/A	% 🗌 N/A		
	A	Signal Description	Signal Type	Condition Pickup Level	Signal Appears on Controller Screen	Modulated 1 Output (0 – 100 %)	Modulated 2 Output (0 – 100 %)		
	Sensor Input		RTD PT100	□Low ≤ °C	□Yes □No □N/A	% 🗌 N/A	% 🗌 N/A		
	07	Not Used	☐ PT1000 ☐ 4-20 mA	☐ High > °C	☐ Yes ☐ No ☐ N/A	% 🗌 N/A	% 🗌 N/A		
	r B t	Signal Description	Signal Type	Condition Pickup Level	Signal Appears on Controller Screen	Modulated 1 Output (0 – 100 %)	Modulated 2 Output (0 – 100 %)		
	Sensor Input		RTD	□Low ≤ °C	□Yes □No □N/A	% 🗌 N/A	% 🗌 N/A		
gnals	Š	Not Used	PT100 PT1000	☐ High > °C	Yes No N/A	% 🗌 N/A	% 🗌 N/A		
itput Si	utput	Signal Description	Output Goes To	Output Changes Based on Signal Input	Output State Level	State Description	Signal Appears on Controller Screen		
out / Ou	Relay 1 Output	Discrete Input 1		Discrete Input 1	Low (0)		Yes No N/A		
Controller Input / Output Signals	Rel	Not Used		Sensor B	High (1)		Yes No N/A		
Contro	utput	Signal Description	Output Goes To	Output Changes Based on Signal Input	Output State Level	State Description	Signal Appears on Controller Screen		
	Relay 2 Output			 Discrete Input 1 Sensor A 	Low (0)		Yes No N/A		
	Rela	Not Used		Sensor B	High (1)		Yes No N/A		
	~	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)		
	Modulated ⁻ Output	Heater SCR Supply Damper	□ 0 – 5V	Discrete Input 1	Low	□ Yes □ No □ N/A	V / mA		
	Nodu Ou	 Return Damper Exhaust Damper Not Used 	□ 0 – 10V □ 4–20mA	Sensor A	High	□ Yes □ No □ N/A	V / mA		
	0	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)		
	Modulated 2 Output	Heater SCR Supply Damper	🗌 0 – 5V	Discrete Input 1	Low	□Yes □No □N/A	V / mA		
	iO Modi	 Return Damper Exhaust Damper Not Used 	□ 0 – 10V □ 4–20mA	Sensor ASensor B	High	□Yes □No □N/A	V / mA		

NV-		COMMISSIONING FORM		Page	3 of 3
Winnij	peg	HVAC CONTROLLER Equipm		Equipment Tag:	
oject	Facility:	Project Name:			
Proj	Area:	RFP No. Tender No.			

sis	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final nalys	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
- A	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

						CO	MISSI	ONII	NG FOF	RM		Page	1 c	of 3
Winnij	peg						HVAC D)AM	PERS			Equipme	nt Tag:	
ect	Facilit	ty:				Proje	ect Name:							
Project	Area:					RFP	No.				Tender N	0.		
	Gono	ral Con	tractor:				Project I	Mana	aor:					
Project Contact	Consi								ninistrator					
Pro Cor		f Winni	peq						roject Ma					
	eny e		P*9				Conoun		oje et ma	liagen				
		n Venti n(s) / Ar					HVAC Co Equipme				HVAC Co Equip. No	ntrol Panel		□ N/A
B	Draw	ings:	HVAC P	&ID:			Control F				Dampers			
Damper Actuators Location & Data			Room In	stalled:			Equipme	nt No).		Control Ty	/pe: 🗌 Mo	odulating	🗌 On / Off
n &	Supp Damp		Manufac				Catalog I	No.			Serial #:			
atio	Actua	ator:	Power S		VAC /		Torque:			Nm	Runtime:		sec.	
Loc			Control I	•	VAC /	VDC	Control C			VAC / VDC			rided: 🗌 Y	
ors	Retur	'n	Room In				Equipme).		Type:		odulating	On/Off
tuat	Damp		Manufac				Catalog I	NO.		Nim	Serial #:			
r Ac	Actua	ator:	Power S		VAC /		Torque:	.	.1.	Nm	Runtime:	Duritala Daeu	sec.	
Ibel	Control Input: VAC / VDC			VDC			;		res ☐ No ☐ On/Off					
Dar	Exha	ust	Manufac				Equipment No. Catalog No.		Type:					
	Damp	ber			VAC /				Runtime:		sec.			
	Actua	ator:	Power S Control I		VAC /	-	Control C	Jutoi	. .	VAC / VDC		Switch Prov	rided: Y	∕es ∏No
			Control	input.	VA07	100	Control C	Juipe		1407 100	Auxiliary	Switch i 100		
	HVAC	Damp	er Lamad	oids Install	ed:	Yes		No	HVAC D	Damper Actuato	or Lamacoi	ds Installed	: 🗌 Yes	🗌 No
/ u0	Powe	r Cable	es Labelle	d at Both E	nds: 🗌	Yes		No	Control	Cables Labelle	ed at Both E	Inds:	🗌 Yes	🗌 No
ectic	Clean	liness:			Good	Accep	table 🔲 I	Poor	Power C	Cable Connecti	ons:	Good G	Acceptab	le 🗌 Poor
al Inspect Cleaning	Fully I	Functio	ning Actu	iators:	Good	Accep	table 🔲 I	Poor	Actuator	rs Properly Ins	talled:	Good [Acceptab	le 🗌 Poor
sual Inspection / Cleaning	All Ac	tuator l	nputs Wo	ork:	Good	Accep	table 🔲 I	Poor	All Actua	ator Outputs W	/ork:	Good G	Acceptab	le 🗌 Poor
Visu	Cable	es Supp	orted App	propriately:		Yes [□ No □	N/A	Equipme	ent Cleaned:	☐ Yes I	Photograph	s Taken:	☐ Yes
	Comn	nents:												
г	1													
		<u> </u>		ured Open	0		sec			tor Measured	0			sec
	Retur	n Actua	ator Meas	ured Open	ng Time:		sec	Retu	urn Actua	tor Measured	Closing Tim	ne:		sec
				sured Ope	ning Time:		sec			ator Measured	0	me:		sec
ing	Low V	/entilati	ion to Hig	ges From h Ventilatio	n:	□ Ye	es 🗌 No			er Changes Fi ion to Low Ven			🗌 Ye	es 🗌 No
Operational Testing	Low ∖	/entilati	ion to Hig	ges From h Ventilatio	n:	🗌 Ye	es 🗌 No			er Changes Fri ion to Low Ven			🗌 Ye	es 🗌 No
ationa				nges From h Ventilatio	n:	□ Ye	es 🗌 No			per Changes I on to Low Ven			🗌 Ye	es 🗌 No
ber	5	Mode	Descripti	on					Fail-Safe	e Position	Low Ventil	lation Rate	High Vent	tilation Rate
	Operating Modes	Supply	/ Damper	Open Posi	tion				Opened	Closed		%		%
	Dper Mo	Return	n Damper	Open Posi	tion				Opened	Closed		%		%
		Exhau	st Dampe	er Open Po	sition				Opened	Closed		%		%
	Comn	nents:								1				
	1													

-	COMMISSIONING FORM		Page 2 of 3			
Winni	peg		HVAC DAMPERS		Equipment Tag:	
oject	Facility:		Project Name:			
Pro	Area:		RFP No.	Tender No		

s	Adjust Damper Actuator Setting	alancing	Comments:			
Settings	Damper Settings Supply Applied to: Damper	Return Damper	Exhaust Damper			
	Cumply Demons Actuator	Direction Control		Angle of F	Rotation Positions	Auxiliary Switch Position
tuator	Supply Damper Actuator	CCW	CCW	Starting:	Ending:	Not Used
. Actu	Deturn Domner Actuator	Direction Control		Angle of F	Rotation Positions	Auxiliary Switch Position
Damper	Return Damper Actuator	CCW	□ ccw	Starting:	Ending:	Not Used
Dan	Exhaust Dompor Astustor	Directio	n Control	Angle of F	Rotation Positions	Auxiliary Switch Position
	Exhaust Damper Actuator			Starting:	Ending:	☐ Not Used

	Verify	Control Signals B	etween HVA	C Controller	and Dampers	Comments:		
	Test F		t physical sig pers for signa	nals rather tha	an installing			
	Field	Wires Labelled at	Both Ends:	🗌 Yes	🗌 No			
		Actuator	Signal Type	Measured Input Voltage	Measured Output Voltage	Output Received at PLC Card	Signal Appears on HMI Screen	SCADA Can See Signal
ignals	ation Rate	Supply Damper	□ 0 - 5V □ 0 - 10V □ On / Off	VDC	VDC	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Control S	Low Ventilation	Return Damper	□ 0 - 5V □ 0 - 10V □ On / Off	VDC	VDC	🗌 Yes 🗌 No 🗌 N/A	□ Yes □ No □ N/A	🗌 Yes 🗌 No 🗌 N/A
Actuator Input / Output Control Signals		Exhaust Damper	□ 0 - 5V □ 0 - 10V □ On / Off	VDC	VDC	□Yes □No □N/A	□Yes □No □N/A	□Yes □No □N/A
uator Inp		Actuator	Signal Type	Measured Input Voltage	Measured Output Voltage	Output Received at PLC Card	Signal Appears on HMI Screen	SCADA Can See Signal
Act	Rate	Supply Damper	🗌 0 – 5V					
	ation	Not Used	□ 0 – 10V □ On / Off	VDC	VDC	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
	High Ventilation	Not Used Return Damper Not Used		VDC				
	High Ventilation Rate	Return Damper	□ On / Off □ 0 - 5V □ 0 - 10V		VDC		☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
		Return Damper Not Used Exhaust Damper Not Used	□ On / Off □ 0 - 5V □ 0 - 10V □ On / Off □ 0 - 5V □ 0 - 10V	VDC VDC	VDC VDC	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
lysis	Retur	Return Damper Not Used Exhaust Damper Not Used rned to Service:	□ On / Off □ 0 - 5V □ 0 - 10V □ On / Off □ 0 - 5V □ 0 - 10V □ On / Off		VDC VDC Yes 🗌 No	□ Yes □ No □ N/A □ Yes □ No □ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Final Analysis	Retur	Return Damper Not Used Exhaust Damper Not Used	□ On / Off □ 0 - 5V □ 0 - 10V □ On / Off □ 0 - 5V □ 0 - 10V □ 0 - 10V □ 0 - 10V	VDC VDC	VDC VDC	□ Yes □ No □ N/A □ Yes □ No □ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

Winnip	Winnipeg		COMMISSIONING FORM HVAC DAMPERS		Page Equipme	3 of 3 nt Tag:
ject	Facility:		Project Name:			
Proj	Area:		RFP No.	Tender No).	
			•	•		

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

	Vinnipeg													Page	1	of 3	
	P~8					HVA		ANS & 3	STARTE	кэ	1			Equipm	ent Tag:		
ect	Facility:					Proj	ect N	ame:									
Project	Area:					RFP	' No.					Tend	der No.				
	General Cor	ntractor:					Pro	ject Mana	ger:								
Project Contact	Consultant:						Contract Administrator:										
Ϋ́	City of Winn	ipeg					Consulting Project Manager:										
	Stortor Down	otroom	aadı									Sectio					
	Starter Down Drawings:	Single Li										Conne			□ N/A		
	Drawings.	Manufac									Serial						
	Contactor Ratings:	Power R				Rated \	ted Voltage: VAC Current Rating:				A		Voltage:	VAC			
Data	Circuit Protection:	Break			Rating:		4	Inst. Setting:	140	A		Manufacturer: Model:					
n & I	Exhaust		🗆 NE	MA	Manufac	turer:		1			Model:						
Starter Location & Data	Contactor:				NEMA S	ize:			□ N.	/A	IEC Rating: A			🗌 AC-3	AC-4		
er Lo	 Supply				Manufac	turer:					Model:						
	Contactor:				NEMA S	ize:			🗆 N.	/A	IEC Ratin	g:			🗌 AC-3	AC-4	
	 Overload	Therr	nal			□ 10 □ 20		Setting /	,		Manufact	urer:					
	Protection:	Electi Not A	t Applicable			<u>□</u> 30				A	Model:						
	Current Trar	nsformer	:	io:						Туре:							
	Control Pow	er Trans	forme	e:	VA Se	A Secondary Voltage: V Prima			Primary F	Primary Fuse: A Secondary Fuse:			e: A				
		_															
Exhaust Fan Data	Equipment T	ag:				Pow	er:		kW /		HP			Voltage	:	VAC	
Exl Far	Full Load An	nps:	A	Servi	ce Factor	:	I	nverter Du	uty Rated:		☐ Yes		No	Insulatio	on Class:		
oly ata	Equipment T	Tag:				Pow	er:		kW /		HP			Voltage	:	VAC	
Supply Fan Data	Full Load An	nps:	А	Servi	ce Factor		I	nverter Du	uty Rated:		🗌 Yes		No	Insulatio	on Class:		
		ial(a) l	alle d		-	1.v	1					-4 ¹ -					
_	Fan Lamaco	()		oth E] Yes				-	of Overhe	-					
ning	Power Cable Cleanliness:		ea at B] Yes] Accer	table	No Poor			es Labelle Connectio				Yes Accepta	□ No ble □ Poor	
Clea	Control Cab		ctions:			-					Interlocks:					ble Poor	
on /	Door Mecha								Contacto						· · ·	ble Poor	
pecti	Door Mecha					-		Poor	Contact /		-					ble Poor	
Visual Inspection / Cleaning	Verify O/L el for the loads		e corre		izod					-	rcuit Break	ker / D			Yes	No	
Vist	Cables Supp	ported Ap	propria	ately:]Yes [es 🗌 No Equipment Cleaned: 🗌 Yes 🛛				es Ph	notograp	h Taken:	🗌 Yes			
	Comments:												•				

Winnipeg			COMMISSIONING FORM HVAC FANS & STARTERS						
Project	Facility:		Project Name:						
Pro	Area:		RFP No.						
		Test			Resistance (μΩ)	Test Summary		
Contact / Pole Measurements		Test		Phase A	Phase B	Phase			
t / P eme	Exhaust	Fan Contactor Contact					Test Inconclusive Further Investigation		
sure	Supply Fan Contactor Contact						Required.		
Cor Mea	Bre	eaker / Disconnect					Test Failed		

	Test Preparation:	Setup: Source: Isolated Contactor: Open	Cable Dest Disconnect Connected Isolated			Note: Approval of City's Representative is required, prior to leaving cables connected during the test.				
Test	-	DISCONNECT ALL POWER C PRIOR TO TEST.	ABLES FROM C	ONTACTORS /	AND DISCON	NECT ALL CO	NTROL POWER FUSES			
		Test	Maltana	Insulat	ion Resistanc	æ (MΩ)	Ground all phases not			
Resistance		Test	Voltage	Phase A	Phase B	Phase C	under test!			
Resi	Exhaust	Contactor Line to Ground	1000 VDC				Test Summary			
	Exhaust	Contactor Load to Ground	1000 VDC				Test Passed			
Insulation	Exhaus	t Contactor Line to Load	1000 VDC				Test Inconclusive			
lns	Supply (Contactor Line to Ground	1000 VDC				Further Investigation Required.			
	Supply C	Contactor Load to Ground	1000 VDC				□ Test Failed			
	Supply	Contactor Line to Load	1000 VDC							
	Comments:									

	Veri	fy Control Signals Bet	ween Sta	arter and	PLC		Comments:							
		t Preparation. Test ph	hysical sig ng jumper	gnals rath	her than									
	Field	d Wires Labelled at Bo	oth Ends:	🗆 Y	Yes [□ No								
nals	Signals	Signal Description	Pilot L	.ight Illum	ninates		inal Rece t PLC Ca			inal Appe HMI Scr		SCADA	Can Se	e Signal
I Sig		Manual Mode	☐ Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗆 N/A	☐ Yes	🗌 No	🗌 N/A
Control Signals	Supply Fan	Auto Mode	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A
ပိ		Run	☐ Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗆 N/A	□ Yes	🗌 No	🗆 N/A	□ Yes	🗌 No	🗆 N/A
& PLC	0,	Overload / Fault	☐ Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	□ N/A	☐ Yes	🗌 No	🗌 N/A
ter			<u>г </u>									 T		
Starter &	Signals	Signal Description	Pilot L	ight Illum.	ninates		inal Rece t PLC Ca			inal Appe HMI Scr		SCADA	Can Se	e Signal
	Sigr	Manual Mode	🗌 Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗌 N/A
	t Fan	Auto Mode	☐ Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	□ N/A
	xhaust	Run	☐ Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗆 N/A	□ Yes	🗌 No	🗆 N/A	□ Yes	🗌 No	🗆 N/A
	ŵ	Overload / Fault	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A

Comments:

<u> </u>			COMMISSIONIN	G FORM		Page	3 of 3		
Winni	pèg	н	Equipment Tag:						
ect	Facility:		Project Name:						
Project	Area:		RFP No.		Tender N	Tender No.			
					•				
~	Exhaust Fan Measured Current	Phase A	A A	Phase B	A	Phase C	A		
ting	Supply Fan Measured Current	Phase A	A A	Phase B	А	Phase C	А		

al Te	s s	Mode Description	Ru	n Start & S	top	Overload Disables Run			
tiona	Operatin Modes	Manual Mode	🗌 Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	□ N/A	
Operational	d 0	Automatic Mode	🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	🗆 N/A	
	Corr	nments:							
			_						

al 'sis	Returned to Service:	🗌 Yes	🗌 No	Comments:
	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
Ā	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

<u> </u>							ом	MISSI	ONII		1		Page	1 of :	3	
Winnij	peg				INSTRU	JMEN.	T TI	RANS	МΙΤ	FER (COI	NTROLLE	ER)	Equipment	Tag:		
ect	Facili	ty:				Pi	rojec	t Name								
Project	Area:					R	FP N	lo.				Tender N	No.			
5 H	Gene	ral Con	tractor:					Project	Mana	ger:						
Project Contact	Cons	ultant:						Contrac	t Adn	ninistrator:						
ٽ ۹	City c	of Winni	peg					Consult	ing P	roject Mana	ger:					
	Draw	ings:	P&ID:				C	Control I	Panel	:		Loop Dia	_oop Diagram:			
Instrument Data			Room I	nstalled:			E	Equipment No.				Output S	ignal: 🗌 4 – 2	20 mA	0 – 10V	
strume Data	Instru	ument:	Manufa	cturer:			C	Catalog	No.			Serial #:				
E			Power	Supply:	VA	C / VDC	; L	Loop Powered Yes No Auxiliary Provided					ary Contacts led:			
	Instru	iment La	amacoid	Installed	l:	🗌 Yes	;		No	Instrument	Properly M	ounted:		🗌 Yes	🗌 No	
/ u	Powe	r Cable	s Labell	ed at Bot	h Ends:	🗌 Yes	5		No	Control Ca	bles Labelle	oth Ends:				
oectio ing	Clear	liness:			Good	Acc	epta	table Door Wiring Matches Loop Diagram:				Good Acceptable Poor				
Visual Inspection / Cleaning	Fully Functioning Good					C Acc	epta	ble 🗌	Poor	Fully Funct Signal(s):	tioning Outp	ut	Good D	Acceptable	Poor	
Visu	Instrument Display Works Properly:						; □	No 🗌	N/A	Equipment	Cleaned:	🗌 Yes	Photographs 7	Taken:	🗌 Yes	
	Comr	ments:														
	Tosti	netrum	ant for n	ormal an	alog readir		alon	a with a	larm	level conditi	00					
					Ū	0	aion	g with a	lann		011.					
		1. Fo	r flow de	etection, u	done as fo use a mult	imeter to										
	;	3. Fo	r level d	etection,	use a phy	sical lev	el ar	nd/or sin	nulate	ed signal for	w alarm level alarm	level.				
	Į	5. Fo	r tempei	ature det	tection, us	e a heat	t gun	and/or	multi	meter for ter	sure alarm	larm level.				
				h Instrum		multime	eter to	o simula	ate sig	inal for vibra	ation alarm l	evel.				
ting	Read			in motiun	ient		Yes	🗌 No	Disp	lay Reflects	Instrument	Readings	(if applicable):	: 🗌 Yes	🗌 No	
Instrument Operational Testing			ion Visu plicable	ally Appe)	ears on		Yes	🗌 No		m Conditior pplicable)	Annunciate	es from Ins	trument	🗌 Yes	□ No	
peratio				natically F f applical	Reset Onc ple):	e 🗆	Yes	🗌 No			ontacts Cha I (if applicab		When Alarm	☐ Yes	🗌 No	
lo tuer		Sens	sor		Mode Des	scription	n		A	larm Output	Contact Sta		sured Analog utput Signal	Instrumen (include		
Instrun	odes	Senso		rument N	Normal Lev	vel Oper	ratior	ו		Dpened	Closed	N/A	□ mA □ V		□ N/A	
	Operating Modes	56/130		rument Alarm Level Operation				Dpened 🗌	Closed	N/A	□ mA □ V		□ N/A			
	Open	Senso	r 2	rument N	Normal Lev	vel Oper	ratior	า		Dpened 🗌	Closed	N/A	☐ mA ☐ V		□ N/A	
	N/A Instrument Alarm Level Oper				el Opera	ition			Dpened	Closed	N/A	□ mA □ V		□ N/A		
	Comments:															

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Winnipeg

COMMISSIONING FORM **INSTRUMENT TRANSMITTER (CONTROLLER)**

2 of 3

Equipment Tag:

Page

Project Facility:

Area:

Project Name:

RFP No.

Tender No.

	Verify	Control Signals Betwe	en Instrument	and Control Panel	Comments:		
	Test F	Preparation: Test physical strengthysical strengthy	sical signals ra or signals	ther than installing			
	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
	Analo Si		□ N/A	□mA □V	□ Yes □ No □ N/A	□ Yes □ No □ N/A	🗌 Yes 🗌 No 🗌 N/A
nals	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
Instrument Output Control Signals	Anal S	□ N/A	🗌 N/A	🗌 mA 🔲 V	□ Yes □ No □ N/A	□ Yes □ No □ N/A	□ Yes □ No □ N/A
	ete t 1	Signal Description	State	Description	Output Received at PLC Card	Signal Appears on HMI Screen	SCADA Can See Signal
	Discrete Output 1		0		□ Yes □ No □ N/A	🗌 Yes 🗌 No 🔲 N/A	🗌 Yes 🗌 No 🗌 N/A
rume		□ N/A	1		☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
Inst	ste t 2	Signal Description	State	Description	Output Received at PLC Card	Signal Appears on HMI Screen	SCADA Can See Signal
	Discrete Output 2		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
	ete t 3	Signal Description	State	Description	Output Received at PLC Card	Signal Appears on HMI Screen	SCADA Can See Signal
	Discrete Output 3		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
	ete t 4	Signal Description	State	Description	Output Received at PLC Card	Signal Appears on HMI Screen	SCADA Can See Signal
	Discrete Output 4		0		🗌 Yes 🗌 No 🗌 N/A	□ Yes □ No □ N/A	□ Yes □ No □ N/A
	0 1	□ N/A	1		Yes No N/A	🗌 Yes 🗌 No 🗌 N/A	Yes No N/A
	Retur	ned to Service:		Yes No	Comments:		1
Final Analysis		oring / Further Inspection	on Required:		_		
Fi Ana	Dene	ir / Doplocoment Dequi					

🗌 Yes 🗌 No

Repair / Replacement Required:

<u> </u>	`			COMMISSIONING FORM	Page 3 of 3				
Winnipèg			INSTRUME	R)	Equipment Tag:				
Project	Facility:			Project Name:					
Pro	Area:			RFP No.		Tender No			
				1	1				
			•			.		• ·	

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

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Winnipeg					LIF	t pui	MP					Equip	oment Tag:			
ect	Facility:				Proje	ct Nam	e:									
Project	Area:				RFP	No.					Те	ender No).			
t t	General Co	ntractor:				Projec	t Mana	ger:								
Project Contact	Consultant:					Contra	act Adm	ninistra	ator:							
Ξŏ	City of Winn	ipeg				Consu	Iting P	roject l	Manage	er:						
	Durania	Oʻra ala Liv				0						0				
-	Drawings:	Single Lir				Schem							nectior			
ata		Equipmer Manufact				Location:						Enclosure Type: ODP TEF			<u>-FC</u>	
8 D		Power:		HP		Model: Voltage: VAC ☐ 1Ø ☐ 3Ø					Full Load Amps: A					
atior	Motor:	Speed:			Service	-	.		Efficie	_	<u> </u>	, rui	LUau F	Power Fact		
Lift Pump Location & Data				□ No											01.	
		Inverter D	Duty Rated	l: 🗌 Yes	Insulatio	n Class	5:		Ambie	nt Tem	р.	°(C	Weight:		lbs
ift Pı		Equipme	nt No.			Locatio	on:					Mec	h. Sea	l: 🗌 Singl	e 🗌 Dou	uble
-	Pump:	Manufact	urer:			Model:				Seria	Serial No.					
		Impeller S	Size:	mm	Driver P	ower:		kW	Flow:		L/s @ 1	TDH	m	Speed:	RPM	
	Motor Lama	coid Instal	lled:	Г	Yes	г] No	Pum	o Lama	coid Ine	stalled.			☐ Yes		No
	Drive Shaft] Yes] No				erheatin	na.				
ß	Motor Powe] Yes] No		-			-				
anir	Motor Opera			-	_	es No Motor Control Cables Labelled:						٦ Goo	d 🗌 Accep			
/ Cle	Motor Moun					cceptable Deor Pump Mounting Installation:										
pection / Cleaning						Acceptable Poor Power Cable Connections:										
spec	Control Cab	le Connec	tions: [Good [Accept	,				[Good Acceptable Poor					
Visual Ins _l	Paint Good Acc															
Visu	Seal Water Automatically Turns On: Yes No							A Seal Water Automatically Turns Off:					N/A			
	Cables Sup	ported App	propriately	: []Yes [] No		Equip	oment (Cleaned	1: □`	Yes P	hotogi	aphs Taken	: 🗆	Yes
	Comments:															

Electrical Testing	WARNING: DISCONNECT ALL FIELD POWER CABLES FROM MOTOR PRIOR TO TEST.									
	Test	Test Valters	Insula	tion Resistand	æ (MΩ)	Ground all phases not				
al T	1651	Test Voltage	Phase A	Phase B	Phase C	under test!				
ectric	Line to Ground	VDC				Test Summary				
Ť			Test Passed							
Motor	Test	Tester	F	Resistance (μΩ	2)	Test Inconclusive				
Мо	1651	rester	Phases A-B	Phases B-C	Phases C-B	Further Investigation Required.				
	Winding Resistance	Fluke Meter				Test Failed				
	Comments:									

Winnipeg		COMMISSIONING FORM	Page	2 of 2
		LIFT PUMP		Equipment Tag:
oject	Facility:	Project Name:		
Area:		RFP No.		

Т

Bea	ring Temperature	Recommended Alarm Level:		°C	Recommended Lockout Level:			°C		
Bea	ring Vibration	🗌 N/A	Recommende	ed Alarm L	evel:	mm	n/s Recommended	Lockout Lev	el:	mm/
Mot	or Winding Temperatu	ure 🗌 N/A	Recommende	d Alarm L	evel:	°C	Recommended	Lockout Lev	el:	°C
Mot	or Measured Current		Phase A	1	Ą	Phase I	3 A	Phase (C	А
Star	rter Displayed Current		Phase A	ŀ	Ą	Phase I	3 A	Phase (C	А
	Bearing Descr	iption	Monitoring	Signal	Meas	ured Value	Calculated Value	PLC/HN	11 Display	ed Value
ring	Motor Drive End	(Upper)	Temperature Vibration	□ N/A □ N/A		Ω mA	°C mm/s		°C mm	n/s
Bearing Monitoring	Motor Drive End	(Lower)	Temperature Vibration	□ N/A □ N/A		Ω mA	°C mm/s		°C mm	n/s
Bearing	Pump Drive End	(Upper)	Temperature Vibration	□ N/A □ N/A		Ω mA	°C mm/s		°C mm	n/s
	Pump Drive End	(Lower)	Temperature Vibration	□ N/A □ N/A		Ω mA	°C mm/s		°C mm	n/s
Ð	Motor Winding Description		Monitoring	Signal	Meas	ured Value	Calculated Value	Alarm Con	tact to PL	C Initiate
Motor Winding	Phase A		Temperature	🗌 N/A		Ω	°C	🗌 Yes	🗌 No	□ N/A
otor V	Phase B		Temperature	🗌 N/A		Ω	°C	🗌 Yes	🗌 No	🗆 N/A
Σ	Phase C		Temperature	□ N/A		Ω	°C	🗌 Yes	🗌 No	🗆 N/A
	Seal Water Insti	rument	Motor Status		Instrument Output Status		Dutput Status	Output Received at Seal /		Seal / PL
Seal Water	Solenoid	□ N/A	Runnir Stoppe	0] Closed] Closed	Opened Opened	☐ Yes ☐ Yes	□ No □ No	□ N/A □ N/A
Se	Flow Switch	□ N/A	Runnir Stoppe	•		Closed Closed	Opened Opened	☐ Yes ☐ Yes	□ No □ No	□ N/A □ N/A

is	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
- A	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

0												
Winni	\								Page	1 of 2		
winni					M	OTORIZE	D VALVE		Equipment T	ag:		
ect	Facility: Project Name:											
Project	Area:				RFP	No.		Tende	r No.			
ect act	General Co	ntractor:				Project Ma	-					
Project Contact	Consultant:						dministrator:					
	City of Wini	nipeg				Consulting	Project Manager:					
	Motorized \ Equipment					Location:		Contro Equipm	l Panel nent No.	□ N/A		
<i>თ</i> დ	Drawings:	P&ID:				Control Par	iel:	Loop D)iagram:			
Valv		Manufact	urer:			Model / CA	T No.	Serial #	#:			
zed on &	Motorized Valve:	Power Su	pply:	VAC / V	DC	Torque:	Nm	Contro	l Type: 🗌 Modu	llating 🗌 On / Off		
Motorized Valve Location & Data		Control In	put:	VAC / V	DC	Control Out	put: VAC / VDC	C Auxilia	ry Switch Provideo	l: □Yes □No		
μ	Remote Manual Station:	Manufacturer: Mod				Model / CA	T No.	Display	/ Screen Provided	Screen Provided: 🗌 Yes 🗌 No		
	Motorized \	/alve Lamad	coid Instal	lled:	/es		Visual Signs of Over	heating:		□ Yes □ No		
i	Power Cables Labelled at Both Ends: Yes N					🗌 No	Control Cables Labe	lled at Bot	h Ends:	🗌 Yes 🛛 No		
	Remote Manual Operator Installed: Yes No					🗌 No	Visual Position Indica	ator Install	ed:	🗌 Yes 🗌 No		
1) CI	Cleanliness: Good Acceptable Po					able 🗌 Poo	or Power Cable Connec	ctions:	Good Ac	ceptable 🗌 Poor		
ctior	Control Cable Connections: Good Acceptable Pc					able 🗌 Poo	or Ground Connections	:	Good Ac	ceptable 🗌 Poor		
edsu	Fully Functioning Valve: Good Acceptable Po											
al Ir	All Valve Inputs Work: Good Acceptable Po									·		
Visu	Cables Supported Appropriately: Yes No N						V/A Equipment Cleaned: Yes Photographs Taken: Yes					
	Comments											
	Motorized \	/alve Measu	ured Oper	ning Time:		sec	Motorized Valve Measu	red Closir	ng Time:	sec		
				ning Voltage:		V	Motorized Valve Measured Closing Voltage: V					
sting	Motorized \			g ronago.		Yes □ No	Motorized Valve Changes From					
al Te		osed Positio	n:				Closed to Open Position	n:	Minimum Open			
Operational Testing	Operating Modes otoM	e Descriptio	n				Fail-Safe Positio	Fail-Safe Position		Maximum Open Position		
Ope	Motorized Valve Position						Opened Closed	□ N/A	%	%		
	Comments:											
a s	Adjust Dam	per Actuato	r Settings	for Damper	Balar	ncing	Comments:					
Valve Settings	Motorized Valve						Angle of Rotation Positions Auxiliary Switch Positio Starting: Ending: Dot Us					

Winnip	peg	COMMISSIOI MOTORIZE	Page Equipment Tag:	2 of 2		
ject	Facility:	Project Name:				
Project	Area:	RFP No.		Tender No		
	Marifa Osatasl Oʻrasələ	l V / - li	Commontor			

	verity	Control Signa	als Between Con	troller and va	ive	Comments.		
Signals	Test F		Test physical sig jumpers for signa		an installing			
Iol (S	Field	Wires Labelle	d at Both Ends:	🗌 Yes	🗌 No			
put Cont	i Open ion	Description	Control Signal Type	Measured Input Signal	Measured Output Voltage	Output Received at PLC Card	Signal Appears on HMI Screen	SCADA Can See Signal
Valve Input / Output Control	Minimum Positi	Motorized Valve	□ 4 – 20 mA □ 0 – 10V □ On / Off			☐ Yes ☐ No ☐ N/A] Yes 🗌 No 🗌 N/A 🔲 Yes 🗌 No 🔲 N/A	
zed Valve	num Distion	Description	Signal Type	Measured Input Voltage	Measured Output Voltage	Output Received at PLC Card	Signal Appears on HMI Screen	SCADA Can See Signal
Motorized	Maximum Open Positi	Motorized Valve	□ 4 – 20 mA □ 0 – 10V □ On / Off	🗌 mA 🗌 V	🗌 mA 🗌 V	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A

	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final	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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<u> </u>	`		COMMISSIONING F	ORM		Page	1 of 2
Winni	peg		OUTDOOR LIGHT	ING		Equipment Tag:	
ect	Facility:		Project Name:				
Project	Area:		RFP No.		Tender No).	
ಕಕ	General Contractor:		Project Manager:				
Project Contact	Consultant:		Contract Administr	ator:			
ٽ آء	City of Winnipeg		Consulting Project	Manager:			
	Potton / Ponk	Dotton / Donk	Panel Feed:	Control		Applicable	
	Battery Bank Location:	Battery Bank Equipment No.	Circuit No.	Control Panel No.		Applicable Drawings:	
ag	Manufa	acturer:	Catalog No.	-		Control Type	

tin ati	Outdoor			Catalog No.			Control Type	
ightin & Data	Lighting	Rated Voltage: VAC	Input C	Current:	А	Lamp Wattage: W	Outdoor Fixtures Qty	y:
loor L ation	Fixtures:	Installed on Outdoor Walls:	[North		East So	outh 🗌 V	Vest
Outc Loc	Photocell:	Manufacturer:		Catalog No.		Adjustable Turn-On Leve Adjustable Turn-Off Leve	_	□ No □ No
	i notoceli.	Rated Voltage: VAC	Rated	Current:	А	Installed Location:	Turn-On / Turn-Off Ratio:	□ N/A

5	Identification Lamacoids Instal	led:	Yes	🗌 No	Lamps Properly Aimed:	☐ Yes	🗌 No
Cleaning	Visual Signs of Moisture:		Yes	🗌 No	All Lamps Properly Operate:	🗌 Yes	🗌 No
Clei	Outdoor Lights Moisture Proof	Rated:	🗌 Yes 🗌 No	🗌 N/A	Outdoor Light Levels Adjustable	: 🗌 Yes 🗌 No	🗌 N/A
/ uo	Cleanliness:	Good 🗌	Acceptable	Poor	Cable Connections:	Good Acceptable	Poor
Inspection	Ground Connections:	Good 🗌	Acceptable	Poor	Connections Properly Sealed:	Good Acceptable	Poor
	Photocell Installation:	Good 🗌	Acceptable	Poor	Dimming Controller Installation:	Good Acceptable	Poor
Visual	Cables Supported Appropriate	ly:	Yes	🗌 No	Equipment Cleaned: 🛛 Yes	Photograph Taken:	🗌 Yes
Ś	Comments:						

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

		oor Lights Turn On and Off Yes No	Outdoor Lights Turn On in Manua	al Mode: 🛛 Yes 🗌 No
ing	Light	Output Adjustable by Dimming Controller: Yes No	Photocell Turn-On Level:	foot-candles
al Testing	g	Mode Description	Outdoor Lights On	Time For Outdoor Lights to Turn On
Operational	Operating Modes	Automatic Mode – Normal Operation	No	N/A
pera	9do Me	Automatic Mode – Photocell Operation	🗌 Yes 🗌 No	sec
ō		Manual Mode – Individual Normal Lighting Circuits Fail	🗌 Yes 🗌 No	sec
	Comr	nents:		

) (СОММ	ISSION	ING FORM		Page	2 of 2
Winni	peg		Ουτι	Equipment Tag:				
ect	Facility:		Project N	Name:				
Proj	Facility: Area:		RFP No.			Tender No.		
	I							
<u>s</u>	Returned to Service:		🗌 Yes	🗌 No	Comments:			
Final Analysis	Monitoring / Further In	spection Required:	🗌 Yes	🗌 No				
A_ A	Renair / Replacement	Required:]			

🗌 No

Name

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.

Signature

Date (yyyy/mm/dd)

🗌 Yes

Repair / Replacement Required:

General Contractor Representative

City Representative

Company

Winni								RM			Page	1 of 2	
***	PS				PA	NELBO	ARD				Equipment Tag:		
Project	Facility:			Proje	ct Na	me:							
Pro	Area:	Area:			RFP No. Tend					der No	der No.		
ರ ರ	General Cor	ntractor:			Proje	ect Manag	ger:						
Project Contact	Consultant:				Con	tract Admi	inistrator						
ڌ ٽ	City of Winn	ipeg			Con	sulting Pro	oject Mar	nage	r:				
	Panel Equipr	nent No.			Pane	el Locatior	n:			Fed F	rom:		
<u>م</u>													
tio	Drawings:	Single Line:			Pane	el Schedul	e:			Schen	natic:		
ocal		Manufacturer:			Mode	el:				Serial	#:		
	Panelboard Ratings:	Ampacity: Withstand:	A kAIC	Rated Vo	oltage	e :	VAC	No.	of Circuits:		□ Single Phase □ Three Phase	☐ 3-wire ☐ 4-wire	
Panelbo	Main Breaker:	Top Installed Bottom Installed	Rating:	A		Inst. Setting:	□ N		Manufacturer: Model:				

Breaker Size (A)	No. of Poles	GFCI Rated (Yes / No)	Manufacturer	Model No.	Interrupting Rating (kA)	Notes

-	Panelboard Lamacoid Installe	d:	Yes	🗌 No	Visual Signs of Overhe	eating:		Yes	🗌 No
Cleaning	Power Cables Labelled:		🗌 Yes	🗌 No	Any Exposed Energize	ed Metal:		🗌 Yes	🗌 No
Clea	Typewritten Directory Installed	ł:	🗌 Yes	🗌 No	All Breaker Sizes Mate	ch Drawing	gs:	🗌 Yes	🗌 No
/ uo	Cleanliness:	Good 🗌	Acceptable	Poor	Enclosure Cover Secu	ıred:	Good	Acceptable	Poor
Inspection	Door Mechanical:	Good 🗌	Acceptable	Poor	Ground Connection:		Good 🗌	Acceptable	Poor
	Exercised Main Breaker:		□ Yes □ No	🗌 N/A	Exercised All Branch (Circuit Brea	akers:	Yes	🗌 No
Visual	Cables Supported Appropriate	ely:	🗌 Yes 🗌 No		Equipment Cleaned:	🗌 Yes	Photogra	oh Taken:	🗌 Yes
Ņ	Comments:								

ŝ			Resistance (μΩ	Test Summary	
Breaker Irements	Test	Phase A	Phase B	Phase C	Test Passed Further Investigation
Main Br Measure	Main Breaker Pole Measurements				Required.
- 2	Comments:				

🗌 N/A

Winnip	peg					NING FORM BOARD			Page	2 of 2		
ct	Facility:			Project N	Name:				Lquipine	Equipment Tag:		
Project	Area:			RFP No.				Tender No				
est	Test Preparation: WARNING: DI	cables connected during the test.										
nce T		т	est	Volt	age	Insulation Resista		,		round all phases not under test!		
sista						Phase A	Phase B	Phase	-			
Res	Main Brea	ker Lir	ne Side to Ground	500 \	/DC				Tes	t Summary		
uo	Main Brea	ker Lo	ad Side to Ground	500 VDC						Test Passed		
Insulation Resistance Test	Bus Bars to Ground			500 \	/DC					Further Investigation Required. Test Failed		
	Comments:											
s	Returned to Ser	rvice:		□ Yes	🗌 No	Comments:						
Final Analysis	Monitoring / Fur	ther In	spection Required:	🗌 Yes	🗌 No							
- Ar	Repair / Replac	ement	Required:	🗌 Yes	🗌 No							
	Company Name Signature Date (yyyy/mm/dd)											

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

e) _				СОММ	IISSIONII	NG FORM			Page 1 of 2			
Winni	pèg						PUT CARD			Equip	ment Tag:		
t	Facility:				Project	Name:					-		
Project										NI-			
–	Area:				RFP No	0.			Tender	NO.			
+ 1	General Contractor: Project Manager:												
Project Contact	Consultant:				C	Contract Adm	ninistrator:						
4 0 2 0	City of Winnipe	g			C	Consulting P	roject Manager:						
	PLC Enclosure	Namo:				PLC Manuf	acturor:		ы	C Model:			
ata	Card Catalog N					Rated Input		VDC		puts 0-7 F	use No		
PLC Data			ng Dwg:			DNP3 I/O F		VDC		ontrol Narr			
Ч			ent Tag:			Rack:	iic.			odule:			
L	-	- 40.6	ioni ragi										
	Pre-Manufactur	red Ca	ble Labelled:		Yes	🗌 No	Pre-Manufactur	ed Cabl	e Tag:				
u	All Inputs Wired	d to Te	rminal Blocks:		Yes	🗌 No	All Input Wires I	_abellec	l at Tern	ninal Block	ks: 🗌 Yes	🗌 No	
pecti	All Inputs Sepa	rately I			Yes	🗌 No	All Inputs Wired		• •		🗌 Yes	🗌 No	
l Ins	Cleanliness:				-	ble 🗌 Poor	Wire Connection				d 🗌 Acceptable		
Visual Inspection	Fully Functionin	-									Acceptable		
>	Card Fully Prog	gramme	ed: 🗌 Go	od 📋	Accepta	ble 🗌 Poor	All Card Input L	ights W	ork:	∐ Good	d 🗌 Acceptable	e ∐ Poor	
	Comments:												
Point	Physical Tag		Description	Sign	al Type	Sign	al Mapping	PLC Input	Loca HMI		A Condition Pickup Lev		
Point	Physical Tag		Description	-	al Type – 20mA	Sign	al Mapping mA/V =	-			A Pickup Lev		
Point 0	Physical Tag		Description	0 - 4 -	– 20mA – 20mA	_		-			Pickup Lev Low High		
	Physical Tag		Description	0 - 4 - 0 -	– 20mA – 20mA – 10V	Low: High:	mA/V = mA/V =	Input	НМІ	SCAD	Pickup Lev Low High N/A		
	Physical Tag	1	Description	0 - 4 - 0 -	– 20mA – 20mA – 10V – 20mA – 20mA	Low: High: Low:	mA/V = mA/V = mA/V =	Input	НМІ	SCAD	 Pickup Lev Low High N/A Low High High 		
0	Physical Tag		Description	0 - 4 - 0 - 0 - 4 - 0 -	– 20mA – 20mA – 10V – 20mA – 20mA – 10V	Low: High:	mA/V = mA/V =				 Pickup Lev Low High N/A Low High N/A 		
0	Physical Tag		Description	0 - 4 - 0 - 4 - 0 - 4 - 0 -	- 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA	Low: High: Low:	mA/V = mA/V = mA/V =				 Pickup Lev Low High N/A Low High N/A 		
0	Physical Tag		Description		– 20mA – 20mA – 10V – 20mA – 20mA – 10V	Low: High: Low: High:	mA/V = mA/V = mA/V = mA/V =				 Pickup Lev Low High N/A Low High N/A 		
0	Physical Tag		Description		- 20mA - 20mA - 10V - 20mA - 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA	Low: High: Low: High: Low:	mA/V = mA/V = mA/V = mA/V = mA/V =				 Pickup Lev Low High N/A 		
0	Physical Tag		Description		- 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA - 20mA	Low: High: Low: High: Low: High:	mA/V = mA/V = mA/V = mA/V = mA/V = mA/V =				 Pickup Lev Low High N/A Low High N/A Low High N/A Low High Low High High N/A 		
0	Physical Tag		Description		- 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA - 20mA - 10V	Low: High: Low: High: Low: High: Low: High:	mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V =				 Pickup Lev Low High N/A 		
0	Physical Tag		Description		- 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 10V - 20mA - 20mA - 20mA	Low: High: Low: High: Low: High: Low: High: Low:	mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V =				 Pickup Lev Low High N/A 		
0 1 2 3	Physical Tag		Description		- 20mA - 20mA - 10V - 20mA - 20mA - 20mA - 20mA - 20mA - 20mA - 20mA - 10V - 20mA - 10V - 20mA - 20mA - 10V	Low: High: Low: High: Low: High: Low: High:	mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V =				 Pickup Lev Low High N/A 		
0 1 2 3 4	Physical Tag		Description		- 20mA - 20mA - 10V - 20mA - 20mA - 10V	Low: High: Low: High: Low: High: Low: High: Low:	mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V =				 Pickup Lev Low High N/A Low Low High N/A Low Low High N/A Low 		
0 1 2 3	Physical Tag		Description		- 20mA - 20mA - 10V - 20mA - 20mA - 20mA - 20mA - 20mA - 20mA - 20mA - 10V - 20mA - 10V - 20mA - 20mA - 10V	Low: High: Low: High: Low: High: Low: High: Low: High:	mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V =				 Pickup Lev Low High N/A 		
0 1 2 3 4 5	Physical Tag		Description		- 20mA - 20mA - 10V - 20mA - 20mA - 20mA - 20mA - 20mA - 20mA - 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA	Low: High: Low: High: Low: High: Low: High: Low: High: Low:	mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V = mA/V =				 Pickup Lev Low High N/A Low Low High N/A Low Low<td></td>		
0 1 2 3 4	Physical Tag		Description		- 20mA - 20mA - 10V - 20mA - 2	Low: High: Low: High: Low: High: Low: High: Low: High: Low: High:	mA/V = mA/V =				 Pickup Lev Low High N/A 		
0 1 2 3 4 5	Physical Tag		Description		- 20mA - 20mA - 10V - 20mA - 20mA - 20mA - 20mA - 20mA - 20mA - 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA - 10V - 20mA - 20mA	Low: High: Low: High: Low: High: Low: High: Low: High: Low: High: Low: High:	mA/V = mA/V =				 Pickup Lev Low High N/A Low Low High N/A Low Low<td></td>		
0 1 2 3 4 5	Physical Tag		Description		- 20mA - 20mA	Low: High: Low: High: Low: High: Low: High: Low: High: Low: High: Low:	mA/V = mA/V =				 Pickup Lev Low High N/A 		

Winnipeg			COMMISSIONING FORM		Page	2 of 2
winnij	peg	Р	LC ANALOG INPUT CARD	Equipment Tag:		
ject	Facility:		Project Name:			
Proj	Area:		RFP No.	Tender No		

is	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final nalysi	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
- Ar	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

<u> </u>				CO	OMN	IISSIONII	NG FO	ORM			Page	1 of 2	2
Winni	pèg			PLC AN	NAL	.OG INPL	JT RT	D CARD	I		Equipm	nent Tag:	
ect	Facility:			Pro	oject	Name:							
Project	Area:			RFP No.						Tender No.			
ect act	General Contractor: Project Manager:												
Project Contact	Consultant:					ontract Adm							
	City of Winnipe	eg			С	onsulting Pr	roject N	lanager:					
	PLC Enclosure	Name:				PLC Manufa	acturer	:		PL	C Model:		
PLC Data	Card Catalog N	lo.				Rated Input	Voltag	e:	VDC	Inj	outs 0-7 Fu	se No.	
LC.	Documents:	I/O Wiri	ng Dwg:			DNP3 I/O F	ïle:			Co	ontrol Narra	tive:	
ш	PLC:	Equipm	ent Tag:			Rack:				Mo	odule:		
	Pre-Manufactu	ured Ca	hle I abelled:	🗌 Yes		□ No	Pro-M	lanufacture	d Cabl	e Tagi			
_	All Inputs Wire										ninal Blocks	: 🗌 Yes	🗌 No
ctior	All Inputs Sepa										RTD Card		
Visual Inspection	Cleanliness:	,				ole 🗌 Poor	-	Connection				Acceptable	_
ual Ir	Fully Functioni	ng Car			-	ole 🗌 Poor	Card	Secured on	PLC F	Rack:		Acceptable	
Vis	Card Fully Pro	gramm	ed: 🗌 Goo	od 🗌 Acce	eptał	ole 🗌 Poor	All Ca	rd Input Lig	ghts Wo	ork:	Good 🗌	Acceptable	Poor
	Comments:												
									PLC	Loca	1	Condition	Pass
Point	Physical Tag		Description	Signal T		_	lappin	g Range	Input		SUANA	Pickup Level	
0				2-wire			°C -	°C				Low	
0				PT100			0-	C					
				2-wire	RTE							Low	
1				□ 3-wire □ PT100		D	°C -	°C				☐ High ☐ N/A	
<u> </u>				2-wire)							
2				3-wire			°C -	°C				High	
<u> </u>				PT100								□ N/A	
3				2-wire			°C -	°C				Low	
							-					□ N/A	
				2-wire								Low	
4				□ 3-wire □ PT100			°C -	°C				☐ High ☐ N/A	
				2-wire								Low	
5				□ 3-wire □ PT100		D	°C -	°C				☐ High ☐ N/A	
				2-wire		D							
6				3-wire	RTE		°C -	°C				🗌 High	
		_		□ PT100								□ N/A	
7				2-wire			°C -	°C				☐ Low ☐ High	
1 .	1			□ PT100				-				□ N/A	

			COMMISSIONING FORM		Page	2 of 2
				Equipment Tag:		
oject	Facility:		Project Name:			
Proj	Area:		RFP No.	Tender No		

	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final nalysi	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
- Ar	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

e				СОМ	MISSION	NING	FORM		Pa	ge	1 of 2			
Winni	pèg					UT CARD		Equ	uipment Ta	ag:				
ect	Facility:			Projec	Project Name:									
Project	Area:			RFP	No.			Tende	er No.					
ct ct	General Cont	ractor:			Project Ma	nager	:							
Project Contact	Consultant: Contract Administrator:													
L 0	City of Winnipeg Consulting Project Manager:													
_	PLC Enclosur	e Name	:	rer:	Ρ	LC Mode	el:							
PLC Data	Card Catalog		Rated Ou	tput V	oltage: VAC /	VDC C	Outputs 0	-3 Fuse No	Э.					
PLC	Documents: I/O Wiring Dwg:				DNP3 I/O	File:		С	Control Na	arrative:				
	PLC: Equipment Tag:				Rack:			N	lodule:					
	Pre-Manufact	ured Ca	ble Labelled:	🗌 Yes	🗌 No	No Pre-Manufactured Cable Tag:								
	All Outputs W	/ired to T	erminal Blocks:	🗌 Yes	🗌 No	AI	Output Wires Labelle	ed at Te	erminal E	Blocks:	Yes	🗌 No		
.0	All Outputs Se	eparately	y Fused:	🗌 Yes	🗌 No	AI	Outputs Wired at An	alog O	utput Ca	rd:	Yes	🗌 No		
ədsu	Cleanliness:	Cleanliness:				or W	ire Connections Both	Ends:	G	ood 🗌 Ac	ceptable	Poor		
ual I	Fully Functioning Card: Good Acceptable Poor Card Secured on PLC Rack: Good Acceptable										Poor			
Vis	Card Fully Programmed: Good Acceptable Poor All Card Input Lights Work: Good Acceptable Poor													
	Comments:													
											Field	Deer		
Point	Physical 1	Гад	Description	Sign	al Type		State Mapping		PLC Input	SCADA	Field Device	Pass (P/F)		
0				4	– 20mA – 20mA	Low High								
					- 10V	riigii								
1					– 20mA – 20mA	Low	mA/V =							
				0 🗌	– 10V	High	mA/V =							
_					– 20mA	Low	mA/V =		_					
2					– 20mA – 10V	High	mA/V =							
2					– 20mA	Low	mA/V =							
3					– 20mA – 10V	High	mA/V =							

is	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
A	Repair / Replacement Required:	🗌 Yes	🗌 No	

Ĩ			COMMISSIONING FORM		Page	2 of 2
Winnipèg		PL	C ANALOG OUTPUT CARD	Equipment Tag:		
oject	Facility:		Project Name:			
Proj			RFP No.	Tender No		

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

Winnipeg			COMMISSIONING FORM	Page 1 of 3		
		PL	C DISCRETE INPUT CARD	Equipment Tag:		
oject	Facility:		Project Name:			
Pro	Area:		RFP No.	Tender No		

 General Contractor:
 Project Manager:

 Consultant:
 Contract Administrator:

 City of Winnipeg
 Consulting Project Manager:

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

	Pre-Manufactured Cable Labe	🗌 Yes	🗌 No	Pre-Manufactured Cable Tag:				
u	All Inputs Wired to Terminal Bl	ocks:	🗌 Yes	🗌 No	All Input Wires Labelled at Term	inal Blocks:	🗌 Yes	🗌 No
nspection	All Inputs Separately Fused:		🗌 Yes	🗌 No	All Inputs Wired at Discrete Input	t Card:	🗌 Yes	🗌 No
dsu	Cleanliness:	Good	Acceptable	Poor	Wire Connections Both Ends:	Good [Acceptable	Poor
ual	Fully Functioning Card:	Good	Acceptable	Poor	Card Secured on PLC Rack:	Good G	Acceptable	Poor
Visi	Card Fully Programmed:	Good	Acceptable	Poor	All Card Input Lights Work:	Good	Acceptable	Poor
	Comments:							

TESTIN	AS AN EXA		DE STA	-	-	-		POSSIBLE TO VERIFY CA	-
Point	Physical Tag	Description	State	State Description	PLC Input	Local HMI	SCADA	Alarm	Pass (P/F)
0			0					On Off	
0			1					On Off	
1			0					□ On □ Off □ N/A	
I			1					On Off	
2			0					□ On □ Off □ N/A	
2			1					On Off	
3			0					□ On □ Off □ N/A	
3			1					On Off	
4			0					□ On □ Off □ N/A	
4			1					On Off	
5			0					□ On □ Off □ N/A	
Э			1					On Off	
6			0					On Off	
б			1					□ On □ Off □ N/A	·
7			0					On Off	
7			1					□ On □ Off	

			COMMISSIONING FORM				2 of 3
W	Winnipèg PL		PL	C DISCRETE INPUT CARD		Equipment Tag:	
	5 Facility:			Project Name:			
	Proj	Area:		RFP No.	Tender No).	

TESTIN	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				
0			1					On Off					
9			0					On Off] N/A				
9			1					On Off					
10			0					On Off] N/A				
10			1					On Off					
11			0					On Off	7 N/A				
11			1					On Off					
12			0					On Off	7 N/A				
12			1					On Off					
13			0					On Off	7 N/A				
15			1					On Off					
14			0					On Off] N/A				
14			1					On Off					
15			0					🗌 On 🗌 Off] N/A				
15			1					On Off					

TESTIN	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					
10			1					🗌 On 🔲 Off	- □ N/A				
17			0					🗌 On 🔲 Off	- □ N/A				
17			1					🗌 On 🔲 Off					
18			0					🗌 On 🔲 Off	- 🗆 N/A				
10			1					🗌 On 🔲 Off					
19			0					🗌 On 🔲 Off					
19			1					🗌 On 🔲 Off	- □ N/A				
20			0					🗌 On 🔲 Off					
20			1					🗌 On 🔲 Off	- □ N/A				
04			0					🗌 On 🔲 Off					
21				1					🗌 On 🔲 Off	- 🗌 N/A			

<u> </u>	COMMISSIONING FORM		Page	3 of 3		
Winnipeg PLC		C DISCRETE INPUT CARD	Equipment Tag:			
ject	Facility:		Project Name:			
Pro	Area:		RFP No.	Tender No).	

Point	Physical Tag	Description	State	State Description	PLC Input	Local HMI	SCADA	Alarm		Pas: (P/F
22			0					🗌 On 🔲 Off		
22			1					🗌 On 🔲 Off	□ N/A	
23			0					🗌 On 🔲 Off	- □ N/A	
23			1					🗌 On 🔲 Off		
24			0					🗌 On 🔲 Off	□ N/A	
24			1					🗌 On 🔲 Off		
25			0					🗌 On 🔲 Off	- □ N/A	
25			1					🗌 On 🔲 Off		
26			0					🗌 On 🔲 Off	□ N/A	
20			1					🗌 On 🔲 Off		
27			0					🗌 On 🔲 Off	□ N/A	
21			1					🗌 On 🔲 Off		
28			0					🗌 On 🔲 Off	□ N/A	
20			1					🗌 On 🔲 Off		
29			0					🗌 On 🔲 Off	- □ N/A	
20			1					🗌 On 🔲 Off		
30			0					🗌 On 🔲 Off	□ N/A	
00			1					🗌 On 🔲 Off		
31			0					🗌 On 📋 Off	□ N/A	
51			1					🗌 On 🔲 Off		

<u>.s</u>	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final nalys	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
A	Repair / Replacement Required:	🗌 Yes	🗌 No	

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

Winni					OMMISSIONI			Page	1 of 2		
•••mmj	pcg			PLCL	DISCRETEO	JTPUT CARD		Equipment	: Tag:		
ect	Facility:			Pr	oject Name:						
Project	Area:			RF	P No.		Tender N	No.			
r											
act	General Contr	actor:			Project Mana	-					
Project Contact	Consultant:				Contract Adn	ninistrator: roject Manager:					
-0	City of Winnipe	eg									
	PLC Enclosure		PLC	C Model:							
PLC Data	Card Catalog I	No.			Rated Outp	ut Voltage: VA	C / VDC Out	puts 0-7 Fuse	No.		
	Documents:	I/O Wiri	ng Dwg:		DNP3 I/O F	ile:	Cor	ntrol Narrative	:		
а.	PLC:	Equipm	ent Tag:		Rack:		Мо	dule:			
	Pre-Manufactu	urad C-	bla Laballad	□ Yes	□ No	Pre-Manufactured C	able Terr				
							Ũ	minal Placks:		□ No	
tion			erminal Blocks:	Yes Yes		All Output Wires Labelled at Terminal Blocks: Yes All Outputs Wired at Discrete Output Card: Yes					
spec	All Outputs Se Cleanliness:	eparately			eptable Poor		ns Both Ends: Good Acceptable Poo				
al In:	Fully Function	ing Cor			eptable Poor	Card Secured on PL					
Visual Inspection	Card Fully Pro	-			eptable Poor						
	Comments:	gramm				/ in Oara input Light			riccopiable		
	Commenta.										
Point	Physical Tag	3	Description	State	e State	Description	PLC Output	SCADA	Field Device	Pass (P/F)	
0				0							
0				1							
1				0							
, i				1							
2				0							
2				1							
3				0							
				1							
4				0							
Ļ.		_		1						\parallel	
5				0							
				1						\downarrow	
6				0	-						
<u> </u>				1						\parallel	
7				0						-	
				1							

Winni	peg	COMMISSIONING FORM PLC DISCRETE OUTPUT CARD					Page Equipment Tag	2 of 2
ect	Facility:		Project N	lame:				
Project	Area:		RFP No.			Tender No).	
<u>is</u>	Returned to Service:		🗌 Yes	🗌 No	Comments:			
Final Analysis	Monitoring / Further In	spection Required:	🗌 Yes	🗌 No				
A	Repair / Replacement	Required:	🗌 Yes	🗌 No				
	I				I			

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

<u> </u>				COM	MISSIONIN	NG FORM			Page	1 of 2
Vinni	pèg				PLC SYSTEM				Equipment	Tag:
ect	Facility:			Projec	ct Name:					
Project	Area:			RFP N	P No. Tender			nder No.		
+ 7	General Cont	ractor:			Project Mana	ger:				
Project Contact	Consultant:			(Contract Administrator:					
r S	City of Winnip	eg		Consulting Pr	oject Manager:					
	PLC Enclosur	e Name [.]			PLC Manufa	cturer:		PLC N	lodel:	
		PLC No. of Modules (Slots)							unication	☐ Wired ☐ Wireless
	HMI Screen Ir	nstalled:	🗌 Yes	🗌 N/A	HMI Manufacturer:			HMI Model:		
Ita	Description	Power Dist Schem.			Pump Ctrl S	ump Ctrl Schematic:		Contro	Control Narrative:	
C Data	Documents:	Network Diagram:			PLC Mode S	Schematic		DNP3	DNP3 I/O List:	
PLC		Power Supply Catalog No.			Rack Numbe	er		Module	e (Slot) No.	
	PLC:	Processor Card Catalog No.			Rack Numbe	er		Module	e (Slot) No.	
		Communication Card Catalog No.			Rack Numbers		Module	Module (Slot) No.		

ç	PLC Lamacoid Installed:		∐ Yes	∐ No	Visual Signs of Overh	eating:		∐ No
pection ing	Cleanliness:	Good 🗌	Acceptable	Poor	PLC Properly Mounte	d:	Good Acceptable	Poor
Inspe Ieanir	Fully Functioning PLC:	🗌 Good	Acceptable	Poor	PLC Fully Programme	ed:	Good Acceptable	Poor
Cal	All Cards Work:		🗌 Yes 🗌 No	□ N/A	Equipment Cleaned:	☐ Yes	Photograph Taken:	🗌 Yes
Visu /	Comments:							

				— —		. .					
	Wet W	ell Levels Start and	d Stop Pumps:	☐ Yes ☐ No	□ N/A	Comments	5:				
	PLC M	ode Cycles Pump	Duties:	🗌 Yes 🗌 No	🗆 N/A						
	HMI So	creen Functions Pr	operly:	🗌 Yes 🗌 No	🗌 N/A						
	Alarm [·]	Test Switch Block	Alarms to SCADA:	🗌 Yes 🗌 No	🗌 N/A						
	HMI So	creen Functions Pr	operly:	🗌 Yes 🗌 No	🗌 N/A						
0	Local N	Node Pushbutton V	Vorks:	🗌 Yes 🗌 No	🗌 N/A	PLC Mode	Pushbut	on Works:	🗌 Yes	🗌 No	🗆 N/A
sting	PLC R	eset Clears PLC M	lode Fail Alarm:	🗌 Yes 🗌 No	🗌 N/A	PLC Mode	e Fails to L	ocal Mode	: 🗌 Yes	🗌 No	🗌 N/A
Operational Testing	SCAD	A Wireless Connec	tion Works:	🗌 Yes 🗌 No	🗌 N/A	SCADA W	ired Conr	ection Wor	ks: 🗌 Yes	🗌 No	🗌 N/A
tion		Pump Duty	Setpoint	Setpoint Le	evel	Output Ch	anges Pu	mp Status	Duty Outpu	It Appears	s on HMI
bera	~		Start	n	า	🗌 Yes	🗌 No	🗆 N/A	Yes	🗌 No	🗌 N/A
Q	atior	Duty 1	Stop	n	า	🗌 Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗆 N/A
	Operation		Start	n	า	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	□ N/A
		Duty 2 🔲 N/A	Stop	n	ı	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗆 N/A
	PLC Mode		Start	n	า	🗌 Yes	🗌 No	🗌 N/A	Yes	🗌 No	🗌 N/A
	ЪСС	Duty 3 🗌 N/A	Stop	n	า	🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	🗌 N/A
	ц		Start	n	I	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	□ N/A
		Duty 4 🗌 N/A	Stop	n	า	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗆 N/A

Winning			COMMISSIONING FORM		Page 2 of 2		
Winni	Winnipèg		PLC SYSTEM	Equipment Tag:			
oject	Facility:		Project Name:				
Pro	Area:		RFP No.	Tender No).		

gs	Program PLC Settings to Match Control Nar	rative.	Comments:
Settings	Programming Applied to PLC:	🗌 No	
PLC 9	Company PLC Programming by:	Name	
<u>.</u> .	Returned to Service:		mments:
Final nalysis	Monitoring / Further Inspection Required:	🗌 Yes 🗌 No	
Ā	Repair / Replacement Required:	🗌 Yes 🗌 No	

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

	Winnipeg				COMMISSIONING FORM							Page	9	1 of 2	2
Winni	peg				UNIT	HEA	TER					Equi	pment Tag		
ect	Facility:			Proj	ect Name										
Project	Area:			RFP	PNo.					Tend	ler No				
	General Cor	ntractor:			Project	Mana	ider:								
Project Contact	Consultant:				Contrac		-	tor:							
5 Pr	City of Winn	ipeg			Consult	ing P	roject N	Man	ager:						
					Llastan										
er Data	Heater Equip	ment No.			Heater Location:						Fed F	rom:			
Unit Heater Location & Data	Drawings:	Single Lir	ne:		Mech. Schedule:					Ś	Schen	natic:] N/A
Unit catio	Unit Heater	Manufact	urer:		Model:				ę	Serial	#:				
۲ ۲	Ratings: Power: kW Rated					ated Voltage: VAC Full Load Amps:				S:	А		1-Phase	□ 3-	Phase
	Unit Heater	Lamacoid	☐ Yes	s Do Visual Signs of Overheating:						Yes		🗌 No			
~	Power Cable	es Labelle	d:	 Yes		No			ate Breaker		ize In	stalle	d: 🗌 Yes		 □ No
ction	Cleanliness:		Good Good	Accep	otable 🗌	Poor		-	roperly Insta				od 🗌 Acce	eptable	Poor
lns lea	Power Conn	ection:	Good	Accep	otable	Poor	Grour	nd C	Connection:] Goo	od 🗌 Acce	eptable	Poor
	Remote The	ermostat Ir	stalled:	□ Yes []No □	N/A	Remo	ote 7	Thermostat	Cable La	abelle	d	🗌 Yes	🗌 No	□ N/A
Visı	Cables Supported Appropriately:] No		Equip	mei	nt Cleaned:	🗌 Ye	s P	hotog	raph Taker	า:	☐ Yes
	Comments:														
	Test Preparation	Sou	Setup: rce:		ower Cab Disconnec Connected	ted						City's Representative is required, bles connected during the test.			
ŋ	WARNING:	DISCON	INECT ALL FIELD	POWER	CABLES	FRO	и мот	OR	PRIOR TO	TEST.					
Testing		-		_			Ins	sula	tion Resist	ance (M	Ω)		Ground	all phas	ses not
		Ie	est	Test	Voltage	P	hase A	ι.	Phase E	8 P	hase	С		der tes	
Heater Electrical		Line to	Ground		VDC								Test Sum	•	
er El								R	Resistance	(μΩ)					
Heat		Τe	est	Т	ester	Pha	ases A		Phases B		ases	С-В	Test In Furthe Requir	er Inves	tigation
		Heating	Element	Flu	ke Meter								Test Fa		
	Comments:														
ting	TESTING:	HEATER	R TO BE RUN FO	R FIVE (5)	MINUTE	S UN	DER F	ULL	LOAD PRI	OR TO F	RECO	RDIN	IG VALUES	S.	
d Tes	Temperature	e		Turn On S	Setpoint:				°C	C Actual Turn On Setpoint: °C				°C	
Full Load Testing	Heater Mea	sured Cur	rent	Phase A		А		Ph	nase B	A Phase C A			A		
Ful	Comments:														

<u> </u>	Winnipeg			ISSION	ING FORM		Page	2 of 2	
Winni	peg		U	NIT HE	ATER		Equipment Tag:		
ject	Facility:		Project N	lame:					
Project	Area:		RFP No.			Tender No).		
			-						
<u>.</u>	Returned to Service:		🗌 Yes	🗌 No	Comments:				
Final Analysis	Monitoring / Further In	spection Required:	🗌 Yes	🗌 No					
Ar	Repair / Replacement	Required:	🗌 Yes	🗌 No					

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

				CON	MIS	SSIONII	NING FORM					Page		l of 4			
Winni	peg				v	ARIAB	LE	FREQU	ENCY I	DRI	VE			Equipn	nent Tag:		
ect	Facility:					Proje	ect Na	ame:					•				
Project	Area:					RFP	No.					Tender	No.	No.			
н н н	General Cor	ntractor:					Proj	ect Mana	ger:								
Project Contact	Consultant:						Contract Administrator:										_
r S	City of Winn	ipeg					Consulting Project Manager:										
	VFD Equipm	ent No.					VFD Location:					Do	wns	tream l	oad.		
	Drawings:	Single Lir	ne:					ematic:	·					ction:			
		Manufact					Mod	el:	Serial				rial #	#:			_
	VFD:	Power Ra	ating:			Rated V	oltag	e:	VAC	Cu	rrent Rating	g:	А	Contro	ol Voltage:	VA	AC
	Circuit Protection:	☐ Break ☐ Fuse	er	I	Rating:	Α	L.	Inst. Setting:		A	Manufactu Model:	urer:		<u> </u>			
Data	Line Reactor:	☐ Install ☐ N/A	ed	1	Rating:		Manufacture Model:					urer:					
D Locatic	Harmonic Filter:	☐ Install ☐ N/A	ed	I	Rating:						Manufactu Model:	urer:					
	Load Reactor:	☐ Install ☐ N/A	ed	I	Rating:	Manufactur Model:					urer:						
	Bypass	ss 🗌 NEMA Manuf					Manufacturer: Moo										
	Contactor:		☐ IEC] N/A	I	NEMA S	ize:				N/A IEC Rating:				А	🗌 AC-3		-4
	Bypass Overload	Therm Electro	onic		Class:	□ 10 □ 20 □ 30	20 Setting /			A	Manufacturer:						
	Protection:	□ Not A	pplicable	е			nown	rtating.			Model:						
	Current Trai			Rati	-						Туре:						
	Control Pow	ver Transf	ormer:	Size	:	VA Se	conda	ary Voltag	je:	V	Primary F	use:		A Sec	ondary Fus	e:	A
a C	Equipment 1	Гад:				Powe	er:		kW /		HP			Voltage	e:	VA	٨C
Motor Data	Full Load Ar	nps:	A S	ervic	e Facto	r:	Ir	nverter Du	uty Rated:		🗌 Yes	🗌 No	D	Insulat	ion Class:		
	VFD Lamac	oid Installe	ed:		C] Yes		🗌 No	Visual S	igns	of Overhea	ating:			🗌 Yes		0
бu	Power Cable	es Labelle	d at Bot	th En	ds: [Yes		🗌 No	Control (Cabl	es Labelleo	d at Both	h En	ds:	🗌 Yes	🗌 No	0
eanii	Cleanliness:				Good [] Accept	able	Poor	Power C	able	Connectio	ons:] Good	Accepta	able 🗌 Po	oor
/ Cl	Control Cab	le Connec	tions:		Good [] Accept	able	Poor	Elect./ N	lech.	. Interlocks] Good	Accepta	able 🗌 Po	oor
ction	Ground Con	nections:			Good [Accept	able	Poor	Contacto	or Co	ondition:			Good	Accepta	able 🗌 Po	oor
spec	Door Mecha	nical:			Good [Accept	able	Poor	Contact	Aligr	nment:] Good	Accepta	able 🗌 Po	oor
Visual Inspection / Cleaning	Verify Bypas sized for the		ment is	corre	ectly []Yes [] No	□ N/A	Exercise	d Ci	rcuit Break	er / Disc	conn	ect:	☐ Yes		0
Vis	Cables Sup	Cables Supported Appropriately:					No Equipment Cleaned: Yes Photograph Taken: [🗌 Ye	es				
	Comments:																

V innij		VA	COMMISSIO			Page Equipi	2 of 4 ment Tag:		
ect	Facility:		Project Name:						
Project	Area:		RFP No.		Tender No				
					Resistance (μΩ))	т	est Summary	
nts		Test	F	hase A	Phase B	Phase C		Test Passed	
Contact / Pole Measurements	Harmonic	Filter Contactor Contact	:					Test Inconclusive Further Investigation	
Sure	Bypass	s Contactor Contact						Required.	
Mea	Brea	aker / Disconnect					C	Test Failed	
	Comments:								
	Test Setup: Cable Destination / Load: Preparation: Source: Isolated Contactor: Open Cable Destination / Load: Disconnected Note: Approval of City's Representative is required in the set of t								
	WARNING: DISCON CONTR	DISCO	ONNECT ALL						
Insulation Resistance (MΩ) Ground									

t	Test	Valtana	Insulat	tion Resistanc	æ (MΩ)	Ground all phases not
e Test	Test	Voltage	Phase A	Phase B	Phase C	under test!
Resistance	VFD Line to Ground	1000 VDC				
sista	VFD Load to Ground	1000 VDC				
ו Re	VFD Line to Load	1000 VDC				Test Summary
atio	Harmonic Filter Contactor Line to Ground	1000 VDC				Test Passed
Insulation	Harmonic Filter Contactor Load to Ground	1000 VDC				Test Inconclusive Further Investigation
=	Harmonic Filter Contactor Line to Load	1000 VDC				Required.
	Bypass Contactor Line to Ground	1000 VDC				Test Failed
	Bypass Contactor Load to Ground	1000 VDC				
	Bypass Contactor Line to Load	1000 VDC				
	Comments:	•			•	

	Ram	np Up Time	Specified:		:	sec		Actual	:	:	sec
	Ram	np Down Time	Specified:		:	sec		Actual	:	:	sec
	Mote	or Measured Current	Phase A	А		Pha	ise B	A	Phase	С	А
ing	VFC	Displayed Current	Phase A	А		Pha	ise B	А	Phase	С	А
Festi	PLC HMI Screen Displayed Motor Current: A						Ammeter Current in Bypass Mode: 🛛 🗌 Yes			🗌 No	□ N/A
Full Load Operational Testing	Potentiometer Adjusts Speed in Manual Yes No					tiomete	er Adjusts S	Speed in Loc	al Auto Mode	e: 🗌 Yes	🗌 No
erat		Mode Description	F	orward	d Run Start	& Stop	Revers	e Run Start	& Stop		
d o p	odes	VFD Manual Mode		Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	□ N/A		
Loa	Σ	VFD Automatic Mode – PLC		Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A		
Full	rating	VFD Automatic Mode – Loca	al Mode			Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A
	Opei	Bypass Manual Mode				Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	□ N/A
		Bypass Automatic Mode – L	ocal Mode			Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	□ N/A
	Com	nments:									

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Winnij	peg	VAI	RIABLE FREQUENCY DRIVE	Equipment Tag:		
oject	Facility:		Project Name:			
Pro	Area:		RFP No.	Tender No		

ő	Program VFD Settings to N	latch Setting L	etter.	Comments:
/FD ttin	Settings Applied to VFD:	🗌 Yes	🗌 No	
Se	VFD Setting Letter File:			

	Verify Control Signals Between VFD and PLC							nts:						
	Tes		hysical sig ng jumpei											
	Fiel	d Wires Labelled at Bo	oth Ends:	۲ 🗌	′es [] No								
		Signal Description	Pilot L	ight Illun	ninates		nal Rece at PLC Ca			nal Appe HMI Scr		SCADA	Can Se	e 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
als	s	Bypass Mode	🗌 Yes	🗌 No	□ N/A	□ Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	□ N/A
Sign	Discrete Signals	Manual Mode	🗌 Yes	🗌 No	□ N/A	□ Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗌 N/A
& PLC Control Signals		Auto Mode	🗌 Yes	🗌 No	🗆 N/A	□ Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗌 N/A
ပိ		Forward Run	🗌 Yes	🗌 No	🗆 N/A	□ Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	□ N/A
& PI		Reverse Run	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	🗌 N/A	🗌 Yes	🗌 No	□ N/A
VFD		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
	als	Signal Description	Меа	asured Si	ignal		gnal rece FD / PLC			nal Appe HMI Scr		SCADA	Can Se	e Signal
	Signals	Speed Input		m	A	🗌 Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	🗆 N/A	🗌 Yes	🗌 No	□ N/A
	Analog 3	Speed Reference		m	A	□ Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	□ N/A
	A	Motor Current		m	A	□ Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	□ N/A	🗌 Yes	🗌 No	□ N/A
	1													

	Returned to Service:	🗌 Yes	🗌 No	Comments:
Final	Monitoring / Further Inspection Required:	🗌 Yes	🗌 No	
1 2	Repair / Replacement Required:	🗌 Yes	🗌 No	

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Winnij	peg	COMMISSIONING FORM RIABLE FREQUENCY DRIVE		Page 4 Equipment Tag:	of 4
oject	Facility:	Project Name:			
Proj	Area:	RFP No.	Tender No		
-					

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