Winnipeg	**INSPECTION FORM** **MOLDED CASE CIRCUIT BREAKER, < 1000V**	Page 1 of 2 ID:

Project		
	Facility:	Project Name:
	Area :	Bid Opportunity:

Breaker Data			
	Location:	Panelboard/MCC:	Cell #:
	Manufacturer:	Type:	Serial #:
	Rated Voltage: V	Frame Size: A	Trip Unit:
	Interrupting Rating: kA	Comments:	

Visual Inspection / Cleaning		
	Breaker Identification Tag Installed: ☐ Yes ☐ No	Visual Signs of Overheating: ☐ Yes ☐ No
	Cleanliness (As Found): ☐ Good ☐ Acceptable ☐ Poor	Cables Supported Appropriately: ☐ Yes ☐ No
	Connections: ☐ Good ☐ Acceptable ☐ Poor	Electro/Mechanical Interlock: ☐ N/A ☐ Good ☐ Acceptable ☐ Poor
	Ground Connection: ☐ Good ☐ Acceptable ☐ Poor	Exercise Circuit Breaker: ☐ Yes
	Door Mechanical: ☐ Good ☐ Acceptable ☐ Poor	Other:
	Comments:	

Breaker Settings

Trip Unit Rating: A — Trip Unit Type: ☐ None ☐ Thermal Magnetic ☐ Electronic ☐ LI ☐ LSI ☐ LSIG

Breaker Setting (As Left)		**Range**	**Setpoint**	**Delay**	**I^2T**
Long Time	☐ Fixed ☐ Adj.	-	X A = A	sec	☐ On ☐ Off
Short Time	☐ Fixed ☐ Adj.	-	X A = A	sec	☐ On ☐ Off
Instantaneous	☐ Fixed ☐ Adj.	-	X A = A	N/A	
Ground Fault	☐ Fixed ☐ Adj.	-	A	sec	☐ On ☐ Off

Insulation Resistance Test

Perform insulation resistance measurements for breakers >= 250A, or as specified.

Temperature: °C

Source: ☐ Disconnected ☐ Connected (Source Isolated)

Load: ☐ Disconnected ☐ Connected (Load Isolated)

Approval is required, prior to leaving cables connected during the test.

Test Voltage (VDC)	**Insulation Resistance (MΩ)**								
	Phase To GND (Breaker Closed)			**Phase To Phase (Breaker Closed)**			**Line to Load (Breaker Open)**		
	A	**B**	**C**	**A – B**	**B – C**	**A - C**	**A**	**B**	**C**

Test Summary ☐ Test Passed ☐ Test Inconclusive. Further Investigation Required. ☐ Test Failed

Comments:

Contact Resistance

Perform contact measurements for breakers >= 250A, or as specified.

Resistance (μΩ)	**A**	**B**	**C**

Comments:

Test Summary
☐ Test Passed
☐ Test Inconclusive
Further Investigation Required.
☐ Test Failed

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

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
Performed By				
Checked By				

Note: The person(s) performing the check is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

Winnipeg	**INSTRUMENTATION SWITCH CHECKLIST**	Page 1 of 1

Project	
Facility:	Project Name:
Area :	Bid Opportunity:

Instrument		
Tag:	Description:	
Manufacturer:	Model:	Serial Number:

Inspection Checklist			
No.	**Item to be Inspected**	**Comments**	**Pass (P/F)**
1.	Instrument type and class per P&ID and specification		
2.	Instrument tag(s) installed and correct		
3.	Installation of sensor complete and correct		
4.	Block and drain valves		
5.	Pneumatic / hydraulic tubing leak tested		
6.	Heat tracing / insulation / instrument housing		
7.	Wiring correct		
8.	Drawings marked up as-built		
9.	HMI Graphic symbol and tag correct		

State Checklist					
State	**State Desc**	**PLC Input**	**Local HMI**	**SCADA**	**Alarm**	**Pass (P/F)**
0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
1		☐	☐	☐	☐ On ☐ Off	

Calibration					
Transition	**Setpoint Trip Point** (incl. units)	**Actual Trip Point** (incl. units)	**Setpoint Time Delay**	**Actual Time Delay**	**Pass (P/F)**
0 → 1					
1 → 0					

Comments:

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
Tested By				
Witnessed By				

Winnipeg	**INSTRUMENTATION TRANSMITTER LOOP CHECKLIST**	Page 1 of 2

Project	
Facility:	Project Name:
Area :	Bid Opportunity:

Instrument (Sensor / Element)		
Tag:	Description:	
Manufacturer:	Model:	Serial Number:

Transmitter		
Tag:	Description:	
Manufacturer:	Model:	Serial Number:
Units:	Design Range: -	
Output ☐ 4-20 mA ☐ 0-10 V ☐ Modbus ☐ Ethernet IP ☐ Other:		

Inspection Checklist			
No.	**Item to be Inspected**	**Comments**	**Pass (P/F)**
1.	Instrument type and class per P&ID and specification		
2.	Instrument tag(s) installed and correct		
3.	Installation of sensor complete and correct		
4.	Block and drain valves		
5.	Pneumatic / hydraulic tubing leak tested		
6.	Heat tracing / insulation / instrument housing		
7.	Impulse lines pressure tested		
8.	Wiring correct		
9.	Drawings marked up as-built		
10.	HMI Graphic symbol, tag and units correct		

Signal Validation					
Input Signal	**Location**	**Design Value**	**Actual Value**	**Error (%)**	**Pass (P/F)**
	Transmitter Display				
	Transmitter Output				
	Process Display				
	PLC				
	HMI				
	Transmitter Display				
	Transmitter Output				
	Process Display				
	PLC				
	HMI				
	Transmitter Display				
	Transmitter Output				
	Process Display				
	PLC				
	HMI				

Notes:
1. Attach factory calbration forms for all instruments where provided and/or specified.
2. Provide instrument parameters for each parameter changed from the factory default.

Comments:

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
Tested By				
Witnessed By				

Winnipeg	**PLC DISCRETE INPUT CHECKLIST**	

Project	
Facility:	Project Name:
Area :	Bid Opportunity:

PLC	
PLC ID:	Description:
Rack:	Slot:

Pt	Tag	Description	State	State Desc.	PLC Input	Local HMI	SCADA	Alarm	Pass (P/F)
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	
			0		☐	☐	☐	☐ On ☐ Off ☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off	

Winnipeg	PLC DISCRETE INPUT CHECKLIST	Page 2 of 2

			0		☐	☐	☐	☐ On ☐ Off	☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off		
			0		☐	☐	☐	☐ On ☐ Off	☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off		
			0		☐	☐	☐	☐ On ☐ Off	☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off		
			0		☐	☐	☐	☐ On ☐ Off	☐ N/A	
			1		☐	☐	☐	☐ On ☐ Off		

Comments:

	Company	**Name**	**Signature**	**Date** (yyyy/mm/dd)
Tested By				
Witnessed By				

Winnipeg	**INSPECTION FORM** **PANELBOARD, LOW VOLTAGE**	Page 1 of 2 ID:

Project		
	Facility:	Project Name:
	Area :	Bid Opportunity:

Panelboard Data				
	Location:	Fed From:		No. of Circuits:
	Manufacturer:	Model:	Serial No:	
	Rated Voltage: V	Current Rating: A	Withstand Rating: A	
	☐ Single Phase ☐ 3 Phase, 3 Wire ☐ 3 Phase, 4 Wire	Neutral Bonded to Ground ☐ Yes ☐ No		
	☐ Main Lugs			
	☐ Main Breaker: Rating: A Manufacturer: Model: Inst. Setting:			
	Complete separate inspection form (F-BKR-MC-LV) for main breaker if >= 250A, or has long, short, or ground fault settings.			

Visual Inspection / Cleaning				
Identification Tag Installed:	☐ Yes ☐ No	Visual Signs of Overheating:	☐ Yes ☐ No	
Visual signs of Moisture:	☐ Yes ☐ No	Visual Signs of Corona:	☐ Yes ☐ No	
Fuse/Breaker Sizes Match Drawings:	☐ Yes ☐ No	Cables Supported Appropriately:	☐ Yes ☐ No	
Cleanliness (As Found):	☐ Good ☐ Acceptable ☐ Poor	Connections:	☐ Good ☐ Acceptable ☐ Poor	
Door Mechanical:	☐ Good ☐ Acceptable ☐ Poor	Ground Connection:	☐ Good ☐ Acceptable ☐ Poor	
Exercise All Circuit Breakers:	☐ Yes ☐ No	Comments:		

Insulation Resistance Test

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

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

Equipment Temperature: °C

Temperature Correction Factor to 20°C:

Test Voltage	**Insulation Resistance (MΩ) Ground all Phases not under test!**							
	A-GND		**B-GND**		**C-GND**		**N-GND**	
	RDG	20°C	RDG	20°C	RDG	20°C	RDG	20°C

Test Summary

☐ Test Passed
☐ Test Inconclusive
Further Investigation Required.
☐ Test Failed

Test Voltages: 120-300V → 500 VDC Test Voltage 301-600V → 1000 VDC Test Voltage

Comments:

Load/Feeder Breakers

Breakers < 100A and Without Inst. Setting

List by model of breaker. Multiple breakers of varying ampacity may be listed per line.

Type	**Manufacturer**	**Model Series**	**Interrupting Rating (kA)**	**Positions/Circuits**	**Notes**
A					
B					
C					
D					
E					
F					

Load/Feeder Breakers

Breakers >= 100A or with Inst. Setting

List each breaker individually. Complete separate inspection form (F-BKR-MC-LV) for breaker if >= 250A, or has long, short, or ground fault settings.

ID	Pos.	Manufacturer	Model	Trip Rating (A)	Int. Rating (kA)	Inst. Setting	Separate Form	Notes
							☐	
							☐	
							☐	
							☐	
							☐	
							☐	

Final Analysis

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

	Company	Name	Signature	**Date** (yyyy/mm/dd)
Performed By				
Checked By				

Note: The person performing the check is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.