Winnipeg SNC·LAVALIN	**INSPECTION FORM** **AUTOMATION – CONTROL CONDUCTORS**	Page 1 of 1 ID:

Project	Facility:	Project Name:
	Area :	Bid Opportunity:

Cable/Conduit Data	Source:		Dest.:	
	Installation: ☐ Cable ☐ Cable Tray ☐ Strapped ☐ Direct Buried		☐ Conduit ☐ EMT ☐ Rigid Steel ☐ Alum. ☐ PVC	☐ Other:
	No. of Conductors:	Size: AWG	Type:	Rated Voltage: V

Visual Inspection	Cable Identification Tag Installed: ☐ Yes ☐ No	☐ N/A	Enclosure Entry Acceptable: ☐ Yes ☐ No	
	Wire tags installed: ☐ Yes ☐ No		Conduit / Cable Supported Appropriately: ☐ Yes ☐ No	
	Comments:			

Insulation Resistance Test

Test Voltage: V	Ambient Temperature: ℃	All conductors not under test grounded for each reading: ☐ Yes ☐ No

#	ID	MΩ	#	ID	MΩ	#	ID	MΩ
1			19			37		
2			20			38		
3			21			39		
4			22			40		
5			23			41		
6			24			42		
7			25			43		
8			26			44		
9			27			45		
10			28			46		
11			29			47		
12			30			48		
13			31			49		
14			32			50		
15			33			51		
16			34			52		
17			35			53		
18			36			54		

1. *Utilize 1000VDC Test Voltage for 600V rated cables, 500VDC for cables rated <= 300V.*
2. *Utilize a single form for each cable / conduit.*
3. *Disconnect both ends of wiring prior to tests.*
4. *Test each conductor to ground. All conductors not under test must be grounded during each test.*
5. *Each reading must not be less than 22 MΩ or significantly less than comparable conductors.*

Comments:

Test Summary: ☐ Test Passed ☐ Test Failed

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

Winnipeg SNC·LAVALIN	**INSPECTION FORM** **AUTOMATION – TWISTED SHIELDED PAIRS**	Page 1 of 2 Cable ID:

Project	Facility:	Project Name:
	Area :	Bid Opportunity:

Cable/Conduit Data	Source:			Dest.:	
	Installation: ☐ Cable ☐ Cable Tray ☐ Strapped ☐ Direct Buried		☐ Conduit ☐ EMT ☐ Rigid Steel ☐ Alum. ☐ PVC		☐ Other:
	No. of Pairs:	Size: AWG	Type:	Rated Voltage: V	

Visual Inspection	Cable Identification Tag Installed: ☐ Yes ☐ No	☐ N/A	Enclosure Entry Acceptable: ☐ Yes ☐ No		
	Wire tags installed: ☐ Yes ☐ No		Conduit / Cable Supported Appropriately: ☐ Yes ☐ No		
	Comments:				

Insulation Resistance Test

Test Voltage: V	Ambient Temperature: ℃	All conductors not under test grounded for each reading: ☐ Yes ☐ No

Pr	ID	Cond. 1 (+) to Gnd (MΩ)	Cond. 2 (-) to Gnd (MΩ)	Shield to Gnd (MΩ)	Pr	ID	Cond. 1 (+) to Gnd (MΩ)	Cond. 2 (-) to Gnd (MΩ)	Shield to Gnd (MΩ)
1					13				
2					14				
3					15				
4					16				
5					17				
6					18				
7					19				
8					20				
9					21				
10					22				
11					23				
12					24				

1. *Utilize 1000VDC Test Voltage for 600V rated cables, 500VDC for cables rated <= 300V.*
2. *Utilize a single form for each cable / conduit.*
3. *Disconnect both ends of wiring prior to tests.*
4. *Test each conductor to ground. All conductors and shields not under test must be grounded during each test.*
5. *Each reading must not be less than 22 MΩ or significantly less than comparable conductors.*

Comments:

Test Summary: ☐ Test Passed ☐ Test Failed

Continuity Test

Pr	ID	Cond. 1 (+) to Cond. 2 (-) (mΩ)	Cond. 1 (+) to Shield (mΩ)	Pr	ID	Cond. 1 (+) to Cond. 2 (-) (mΩ)	Cond. 1 (+) to Shield (mΩ)
1				13			
2				14			
3				15			
4				16			
5				17			
6				18			
7				19			
8				20			
9				21			
10				22			
11				23			
12				24			

1. Record resistance from one end for each connection shown, which shall be made at the other end of the cable.

Comments:

Test Summary: ☐ Test Passed ☐ Test Failed

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

Winnipeg SNC·LAVALIN	**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 / SNC·LAVALIN	**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 SNC·LAVALIN	**MODULATING CONTROL DEVICE CHECKLIST**	Page 1 of 1

Project	
Facility:	Project Name:
Area :	Bid Opportunity:

Control Device		
Tag:	Description:	
Manufacturer:	Model:	Serial Number:

Inspection Checklist			
No.	**Item to be Inspected**	**Comments**	**Pass (P/F)**
1.	Actuator type and class per P&ID and specification		
2.	Instrument tag(s) installed and correct		
3.	Installation of actuator complete and correct		
4.	Wiring correct		
5.	Drawings marked up as-built		
6.	HMI graphic symbol, tag and units correct		

Control Validation					
Control Output	**Location**	**Design Value**	**Actual Value**	**Error (%)**	**Pass (P/F)**
0%	**PLC Output**				
	Field Device				
50%	**PLC Output**				
	Field Device				
100%	**PLC Output**				
	Field Device				

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 SNC·LAVALIN	**PID CONTROLLER CHECKLIST**	Page 1 of 1

Project	
Facility:	Project Name:
Area :	Bid Opportunity:

Controller Loop	
Tag:	Description:

Test Checklist			
No.	**Item to be Inspected**	**Comments**	**Pass (P/F)**
1.	Startup Test		
2.	Input signal positive bump test		
3.	Input signal negative bump test		
4.	Bumpless auto-manual control transition		
4.	Manual output capability		
5.	Bumpless manual-auto control transition		
6.	HMI graphic symbols, tag and units correct		
7.	HMI equipment faceplate correct		

Final PID Tuning Values		
P :	**I :**	**D :**

Notes:
1. Attach printouts of trends for varous tests, with final PID tuning values.

Comments:

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

Winnipeg SNC·LAVALIN	PLC DISCRETE INPUT CHECKLIST	Page 1 of 2

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		
			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 SNC·LAVALIN	PLC DISCRETE OUTPUT CHECKLIST	Page 1 of 2

Project	
Facility:	Project Name:
Area :	Bid Opportunity:

PLC	
PLC ID:	Description:
Rack:	Slot:

Pt	Tag	Description	State	State Desc.	PLC Output	Field Device	Pass (P/F)
			0		☐	☐	
			1		☐	☐	
			0		☐	☐	
			1		☐	☐	
			0		☐	☐	
			1		☐	☐	
			0		☐	☐	
			1		☐	☐	
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			0		☐	☐	
			1		☐	☐	

Comments:

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