	<u> </u>	<b>•</b> ))					CTION				Page	1 of 1	
Win	nipèg sr	NC+LAVALIN	AU	TOMA	TION	1 – C	ONTR	OL (	CONDUCTORS		ID:		
Project	Facility:					Proje	ect Name	e:					
Proj	Area :					Bid Opportunity:							
	1				Į								
duit	Source:					Dest.:							
Cable/Conduit Data	Installation	☐ Cable on: ☐ Cab ☐ Stra	ole Tray apped		☐ Conduit           ☐ Direct Buried         ☐ EMT         ☐ Alum.           ☐ Rigid Steel         ☐ PVC						] Other:		
ပိ	No. of Conductors:				ize:		А	WG	Type:		Rated Vo	ltage:	V
ء	Cable Identification Tag Installed:				□ No	o [	□ N/A	Enc	osure Entry Accepta	able:		□ Ye	es 🗌 No
Visual Inspection		s installed:		] Yes	□ No	L )			duit / Cable Support		opriately:	Y∈	es 🗌 No
Vi	Commen	its:						1					
<u> </u>													
	Test Voltage:	V	Ambient Te	mperatu	ıre:	9	C All c		ctors not under test	grounde	ed for each	☐ Yes	☐ No
	#	ID	M	Ω	#		ID	- 3	МΩ	#	II	)	MΩ
	1				19					37			
	2				20					38			
	3				21					39			
	4				22					40			
	5				23					41			
	6				24					42			
	7				25					43			
est	8				26					44			
Resistance Test	9				27					45			
tanc	10				28					46			
sis	11				29					47			
⊆	12				30					48			
atio	13				31					49			
Insulatio	14				32					50			
_	15				33					51			
	16				34					52			
	17				35					53			
	18				36					54			
	1. 2. 3. 4. 5.	Utilize a single Disconnect bot Test each cond	form for each th ends of will ductor to gro	ch cable , iring prio und. All	/ cond or to te: ' condu	luit. sts. uctors	not und	er tes	C for cables rated < at must be grounded as than comparable	during	each test. tors.		
	Commen	its:											
	Test Sur	nmary: 🔲 To	est Passed	□ T <sub>0</sub>	est Fa	iled							
		Company		Name					Signature			Date (yyyy	//mm/dd\
D	mad P	Company		ivalile					Signature			Date (yyy)	//IIIII/uu)
Perfor	med By												

**Checked By** 

	<u> </u>	<b>*))</b>		IN	SPECT	ΓΙΟΝ	FOR	M		Page	e 1 of 2		
Win	nipeg	SNC·LAVALIN	AUT	OMATION	I – TWISTED SHIELDED PAIRS					Cab	le ID:		
ect	Faci	lity:			Project Name:								
Project	Area	1:			Bid Opportunity:								
	1												
duit	Soul	ce:				Dest	:						
Cable/Conduit Data	Insta		e able Tray rapped	☐ Direct E	☐ Conduit ☐ Other:  Buried ☐ EMT ☐ Alum. ☐ Rigid Steel ☐ PVC								
Ca	No. of Pairs:  Size: AWG Type: Rated Voltage:										V		
Ę	Cabl	e Identification Tag	Installed:	] Yes □ No	1 c	N/A	Enclos	sure Entry Acce	ptable:			es 🗌 No	
Visual Inspection	Wire	tags installed:		Yes No	 )		Condu	it / Cable Supp	orted App	ropriately: Yes No			
Vi	Com	ments:											
	]		1			ı							
	Test Voltage: V Ambient Temperature:				C	All co		ors not under te	est grounde	ed for	each ☐ Yes	☐ No	
	Pr ID		Cond. 1 (+) to Gnd (MΩ)	Cond. 2 (-) to Gnd (MΩ)	·) Shield to Gnd (MΩ)		Pr	ID	Cond. 1 to Gn (MΩ	ď	Cond. 2 (-) to Gnd (MΩ)	Shield to Gnd (MΩ)	
	1						13						
	2						14						
	3						15						
est	4						16						
e i	5						17						
tanc	7						18 19						
esis	8						20						
n R	9						21						
sulation Resistance Test	10						22						
nsu	11						23						
_	12				1		24						
	Com	<ol> <li>Utilize 1000VDC Test Voltage for 600V rated cables, 500VDC for cables rated &lt;= 300V.</li> <li>Utilize a single form for each cable / conduit.</li> <li>Disconnect both ends of wiring prior to tests.</li> <li>Test each conductor to ground. All conductors and shields not under test must be grounded during each test.</li> <li>Each reading must not be less than 22 MΩ or significantly less than comparable conductors.</li> </ol>											

☐ Test Passed

☐ Test Failed

Test Summary:



# INSPECTION FORM AUTOMATION – TWISTED SHIELDED PAIRS

Page	2 of 2	
ID:		

	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			
<del>,</del>	5				17			
ĕ	6				18			
E C	7				19			
Continuity Test	8				20			
ة د	9				21			
	10				22			
	11				23			
	12				24			
		1. Record resistan	nce from one end for e	ach connection show	vn, wl	hich shall be made	at the other end of the	ne cable.
		ments:						
	Test	Summary:	est Passed	t Failed				
		C	Nama					to (

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





### **INSTRUMENTATION SWITCH CHECKLIST**

Page

			Р	Project						
Facility:			Project Name:							
Area :			Bid Opportunity:							
				strument						
Tag:		Descripti	ion:							
Manufacturer	:	Model:				Serial Numb	er:			
			Inspecti	ion Check	list			_		
No. Item to	be Inspected						Comm	ents		Pass (P/F)
1. Instrum	nent type and class per P&ID a	and speci	fication							
2. Instrum	nent tag(s) installed and correc	ot								
3. Installa	ation of sensor complete and c	orrect								
4. Block a	and drain valves									
5. Pneum	atic / hydraulic tubing leak tes	ted								
6. Heat tra	acing / insulation / instrument	housing								
7. Wiring	correct									
8. Drawing	gs marked up as-built									
9. HMI Gr	raphic symbol and tag correct									
_			State	Checklist	t					
State State	e Desc		PLC Input	Local HN		SCADA		Ala	arm	Pass (P/F)
0								On 🗌 Of	 if	(1,,
1								On 🗌 Of	—— П N/A	
<u> </u>				libration						П
Transition	Setpoint Trip Point (incl. units)		Actual Trip Poi (incl. units)	int _	_	Setpoint Time Delay			Actual me Delay	Pass (P/F)
0 → 1	·									
1 → 0		<b>†</b>								<u> </u>
Comments:										
	Company	Name			Signat	ure			Date (yyyy/mm/d	id)
Tested By									l <u>—</u> ——	
Witnessed E	Зу				_	_	_		 	_





## INSTRUMENTATION TRANSMITTER LOOP CHECKLIST

Page

1 of 2

		Projec	:t					
Facility:		Project Name:						
Area :		Bid Opportunity:						
		Instrument (Sens	or / Elemen	t)				
Tag:	Descrip	tion:						
Manufacturer:			Serial Number:					
		Transmi	tter					
Tag:	tion:							
Manufacturer:			Serial Number:					
Units:	Design Range:		-					
	Modbus thernet IP	Other:						
		Inspection C	hecklist					
No. Item to be Inspected				Comments	Pass (P/F)			
Instrument type and class per P	&ID and spec	cification						
2. Instrument tag(s) installed and c	correct							
Installation of sensor complete a	and correct							
4. Block and drain valves								
5. Pneumatic / hydraulic tubing lea								
6. Heat tracing / insulation / instrun								
7. Impulse lines pressure tested								
8. Wiring correct								
9. Drawings marked up as-built								

Drawings marked up as-built

HMI Graphic symbol, tag and units correct

10.





#### INSTRUMENTATION TRANSMITTER LOOP CHECKLIST

Page

2 of 2

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

N	l۸	to	

Comments:

Witnessed By

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

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





### MODULATING CONTROL DEVICE CHECKLIST

Page

			Project				
Facility:		F	Project Name:				
Area :		E	Bid Opportunity:				
			Operation I Provide	_			
_			Control Devic	e 			
Tag:		Description	on:				
Manufacturer:		Model:		Ser	ial Number:		
			Inspection Chec	klist			
No. Item to be	Inspected				Comments	i	Pass (P/F)
Actuator ty	pe and class per P&ID an	d specifica	ation				
2. Instrument	t tag(s) installed and corre	ct					
3. Installation	of actuator complete and	correct					
4. Wiring cor	rect						
5. Drawings	marked up as-built						
6. HMI graph	ic symbol, tag and units co	orrect					
			Control Validati	on			
Control Output	Location		Design Value	•	Actual Value	Error (%)	Pass (P/F)
	PLC Output						
0%	Field Device	)					
500/	PLC Output						
50%	Field Device	<del>)</del>					
4000/	PLC Output						
100%	Field Device	<del></del>					
Notes: 1. A 2. P	ttach factory calbration for rovide instrument paramet	ms for all in ers for eac	nstruments where provid ch parameter changed fro	ed and/or spoom the factor	ecified. y default.		
Comments:							
	I			1			
	Company	Name		Signature		Date (yyyy/mm	1/dd)
Tested By							
Witnessed By							
	Î.	1		i		i	



Witnessed By



## PID CONTROLLER CHECKLIST

Page

				Project				
Facility	/:			Project Name:				
Area :				Bid Opportunity:				
				Controller Loo	р			
Tag:			Descrip	otion:				
			<u> </u>					
				Test Checklis	<u>t</u>			Pass
No. I	tem to be	Inspected				Comments		(P/F)
1. 5	Startup Tes	st						
2. l	nput signa	I positive bump test						
3. li	nput signa	I negative bump test						
4. E	Bumpless a	auto-manual control tr	ansition					
4. N	Manual out	put capability						
5. E	Bumpless r	manual-auto control tr	ansition					
6. H	HMI graphi	c symbols, tag and ur	nits correct					
7. H	HMI equipr	nent faceplate correct	t					
				Final PID Tuning V	alues	T		
	P:		1:			D:		
Notes:								
1.	At	tach printouts of trend	ls for varous	tests, with final PID tuning	values.			
Comme	ents:							
		Company	Name	•	Signature		Date (yyyy/mm/d	44)
<u> </u>		Company	INAIII	<u> </u>	Signature		Date (yyyy/IIIII/C	au)
Tested	d By							





## PLC DISCRETE INPUT CHECKLIST

Page

					Drainat							
Facility:				Project	Project Name:							
Area:					Bid Opportunity:							
Alea .				Бій Ор	porturity.							
					PLC							
PLC II	D:		Description	on:								
Rack:			Slot:									
Pt	Tag	Descr	ription	State	State Desc.	PLC Input	Local HMI	SCADA	Alarm	Pass (P/F)		
				0					On Off			
				1					□ On □ Off	`		
				0					☐ On ☐ Off			
				1					On Off	`		
				0					On Off			
				1					☐ On ☐ Off	`		
				0					On Off			
				1					On Off	`		
				0					On Off			
				1					On Off	`		
				0					On Off			
				1					On Off	`		
				0					On Off			
				1					☐ On ☐ Off	`		
				0					On Off			
				1					On Off	`		
				0					On Off			
				1					On Off	`		
				0					☐ On ☐ Off			
				1					☐ On ☐ Off	`		
				0					☐ On ☐ Off ☐ N/A			
				1					On Off	`		
				0					☐ On ☐ Off ☐ N/A			
				1		П	П		☐ On ☐ Off	`		

Winnipeg	SNC·LAVALIN	Р	PLC DISCRETE INPUT CHECKLIST Page 2 of 2						2
		0					□ On □ O	ff	
		1					□ On □ Of	— □ N/A	
		0					□ On □ Of	ff	
		1					☐ On ☐ Of	— □ N/A ff	
		0					□ On □ O		
		1					☐ On ☐ Of	— □ N/A ff	
		0					□ On □ O	ff N/A	
		1					☐ On ☐ Ot	ff LIN/A	
Comments:									

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





## PLC DISCRETE OUTPUT CHECKLIST

Page

1 of 2

					Project							
Facility:				Project Na	me:							
Area:				Bid Oppor	Bid Opportunity:							
					PLC							
PLC ID:			Description	on:								
Rack:			Slot:									
Pt	Tag	Descr	ription	State	State Desc.	PLC Output	Field Device	Pass (P/F)				
				0								
				1								
				0								
				1								
				0								
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Winnipeg	SNC·LAVALIN	PL	C DISCRETE OUTPUT CHE	CKLIST	Page 2 of	2		
		0						
		1						
		0						
		1						
		0						
		1						
		0						
		1						
Comments:								

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