

L		K		J		I		H		G		F		E		D		C		B		A	
ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
1	1.000																						

Sumitomo Electric Wiring Systems,INC.-Components Division

PROCESS FLOW DIAGRAM

PRODUCT : Various Metal Stamping Parts
PROCESS: Metal Stamping

KEY CONTACT/DEPT., LOC. Debbie Gillenwater/L. Roth -QA Dept.
PHONE (270) 237-5418-X6853 & 8201 **FAX** (270) 237-4953

SUPPLIER APPROVALS:
 General Plant Manager/Above:

Supplier/loc. SEWS-Scottsville#5

Mfg. Sup.: K. Chapman

Prepared By: Dean Karfeskint QA Engineer

04.10.14	Revised set-up operation & characteristics	D. Gillenwater
02.25.14	Revised terminology to match PFMEA/CP	D. Gillenwater
12.13.13	Remove sections 110, 120 and 150.	L.R., J.F., D.G.
5.12.11	Remove In-Line Terminal Clean/Supervisor Audit	L. Roth, K. Chapman
8/31/08	Removed the name of cleaning sub-contractor	D. Karfeskint
4/1/05	GLOBAL QUALITY & ORG UPDATES	D. Karfeskint, K.
2/17/05	FORMAT CHANGES/UPDATED INFO	D. Karfeskint
2/9/00	ISSUED WITH FORMAT CHANGES	T. DAY
6/04/99	ISSUED W/ FORMAT CHANGES/UPDATES	T. GRAVEL, D. LYONS,
DATE	CHANGE POINTS	CORE/DEV. TEAM

Manufacturing Manager/Above:
ALB
Quality Manager/Above:
K. Chapman
Customer Approval if required:
Colin...

PART ASSEMBLY	PART RECEIPT	OPERATION	INSPECTION	OPERATION/INSPECTION	STORAGE	DELAY	TRANSPORTATION	OPERATION STEP	OPERATOR

OPER #	CI #	OPERATION DESCRIPTION	PROCESS FLOW	KEY CHARACTERISTICS
0010	#	Raw Material Receiving (Metal Coils)		Visual Comparison Against Packing List Shipping-Receiving Red Tag Procedure
0020	#	Raw Material Receiving Inspection		Per Inspection Instruction Sheet-Receiving Per Inspection Instruction Sheet-Receiving Per Inspection Instruction Sheet-Receiving

Sumitomo Electric Wiring Systems, Inc.-Components Division

OPER #	CI #	OPERATION DESCRIPTION	PROCESS FLOW					KEY CHARACTERISTICS	
PART AS ASSYD	PART AS RECD	OPERATION	INSPECTION	OPERATION/ INSPECTION	STORAGE	DELAY	TRANSPORTATION	OPERATION STEP	OPERATOR
		Characteristics							
		Reject		Reject					
				Deliver to Raw Material Storage					Per Inspection Instruction Sheet-Receiving
0030		Raw Material Storage			Raw Material Storage				Red Tag Procedure
									Per Raw Material Lot Control Sheet
0040		Metal Stamping Loading Raw Material							Per Raw Material Lot Control Sheet Per Shop Order and Barcode confirmation
				Deliver to Metal Stamping Area					

Sumitomo Electric Wiring Systems,INC.-Components Division

PART ASYD		PART AS RECT		OPERATION		INSPECTION		OPERATION/INSPECTION		STORAGE		DELAY		TRANSPORTATION		OPERATION STEP		OPERATOR			
OPER #	CI #	OPERATION DESCRIPTION				PROCESS FLOW										KEY CHARACTERISTICS					
0050		Metal Stamping Die/Machine Set-up Machine/Die PM Raw Material Machine Number Tool / Die Number Safety Checks Material Straightntner Raw Material Vision System In-Line / Vision Inspection System Winder Set-Up				Machine Set-Up										Per Shop Order & Barcode scanning Per Maintenance Schedule Per Shop Order & Barcode scanning Per Production Schedule Per Shop Order Per Daily Machine Check Per Material Straightntner set-up Per Raw Material Vision set-up Per In-Line Inspection Set-Up and Vision System Set-up Per Winder Set-up Sheet					
0060		Manufacturing Initial Inspection (Start Up)				Initial Inspection-Mfg.										# Part Appearance/Dimension/Function per Visual Inspection and Terminal Inspection Sheets					

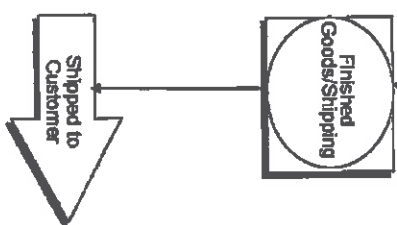
Sumitomo Electric Wiring Systems, INC.-Components Division

OPER #	CI #	OPERATION DESCRIPTION	PROCESS FLOW	KEY CHARACTERISTICS
0070	#	Quality Assurance Inspection (Mass Production)		# Part Appearance/Dimension/Function per Visual Inspection and Terminal Inspection Per Red Tag Procedure Per Defective Terminal Procedure, Backtrack & Recall Procedure
0080		Metal Stamping Production Checks (Manufacturing)		# Part Appearance/Dimension/Function per Visual Inspection and Terminal Inspection Sheets # Part Appearance/Dimension/Function per Visual Inspection Sheets Stop Production- Make Adjustments, Rerun or Die Sent to Maintenance

Sumitomo Electric Wiring Systems,INC.-Components Division

PART ASSEMBLY		PART ASSEMBLY	OPERATION	INSPECTION	OPERATION/INSPECTION	STORAGE	DELAY	TRANSPORTATION	OPERATION STEP	OPERATOR
OPER #	CI #	OPERATION DESCRIPTION	PROCESS FLOW							KEY CHARACTERISTICS
										Per Red Tag Procedure Per Defective Terminal Procedure, Backtrack & Recall Procedure
0090		QA / Set Up Critical Defect Inspection Prior to Change Point								# Part Appearance/Dimension/Function per Global Quality Standard Per Red Tag Procedure Per Defective Terminal Procedure, Backtrack & Recall Procedure
0100		Finished Product Packing / Labeling								Per Operator Check Sheet
0130		Finished Goods Storage								Per BPCS Electronic System

Sumitomo Electric Wiring Systems,INC.-Components Division

PART AS ASSTD		PART AS RECD		OPERATION	INSPECTION	OPERATION/ INSPECTION	STORAGE	DELAY	TRANSPORTATION	OPERATION STEP	OPERATOR		
OPER #	CI #	OPERATION DESCRIPTION				PROCESS FLOW						KEY CHARACTERISTICS	
0140		Warehouse Stock Assessment										Per Weekly Stock Assessment Sheet	
0160		Shipping Finished Goods										Shipping Label Per BPCS Electronic System	
0170		Annual Layouts										Per Customer Drawing/Request	

Sumitomo Electric Wiring Systems, Inc

Gage Linearity Study

4/27/2015

1

Study Date 4/27/2015

Company Part No.: Weight

Gage ID 329079

Part No.

Gage Desc Force Gage

Part Desc Weight (grams)

NIST No.:

Characteristic Weight

Study Type Linearity & Bias

Use Range Method for Bias No

Appraiser L. Roth

☒ Approved

MSA Version

4

Specification Limits

Min

Max

Pp (or Ppk) Target

6-Sigma Proc Var

T
R
I
A
L
S

Part Reference Values					
	1	2	3	4	5
	10	20	50	100	500.002
1	10	20	50	100	500
2	10	20	50	100	500
3	10	20	50	100	500.01
4	10	20	50	100	500
5	10	20	50	100	500
6	10	20	50	100.001	500
7	10	20	50	100	500
8	10	20	50	100	500
9	10	20	50	100	500.01
10	10	20	50.001	100	500
11	10	20	50	100	500
12	10	20	50	100	500
Avg. Bias/Part	0.000000	0.000000	0.000083	0.000083	-0.000333
Predicted Bias	0.000064	0.000056	0.000033	-0.000006	-0.000314

	Coefficient	DF	t Stat	t Critical	
Goodness of Fit	0.007181	Intercept	0.000072	58.000000	.26164 2.00172 OK
Standard Error	0.001706	Slope	-0.000001	58.000000	-64679 2.00172 OK
SE % of TV		Upper Fitted Confidence Limit at worst point			0.000498 OK
SE % of Tol		Lower Fitted Confidence Limit at worst point			-0.000509 OK

Gage Linearity Study

Bias

	1	2	3	4	5
1	0.000000	-0.000000	0.000000	0.000000	-0.002000
2	0.000000	-0.000000	0.000000	0.000000	-0.002000
3	0.000000	0.000000	0.000000	0.000000	0.008000
4	0.000000	0.000000	0.000000	0.000000	-0.002000
5	0.000000	0.000000	0.000000	0.000000	-0.002000
6	0.000000	0.000000	0.000000	0.001000	-0.002000
7	0.000000	-0.000000	0.000000	0.000000	-0.002000
8	0.000000	-0.000000	0.000000	0.000000	-0.002000
9	0.000000	-0.000000	0.000000	0.000000	0.008000
10	0.000000	0.000000	0.001000	0.000000	-0.002000
11	-0.000000	0.000000	0.000000	0.000000	-0.002000
12	0.000000	0.000000	0.000000	0.000000	-0.002000

Coefficient
Lower Upper

Avg. Bias	-0.000033	-0.000472	0.000405	DF	59.000000	EV % of TV
Standard Error	0.000219	Acceptable		Std. Dev	0.001697	EV % of Tol

UNCERTAINTY SETUP

Uncertainty Contributor	Type	Plus or Minus	Probability Distribution	Based On	DF	Include
Linearity						
Linearity Bias Corrected	A	0.008314	Rectangular	Maximum Residual	20.9	Yes
Only Bias corrected	A	0.008333	Rectangular	Maximum Residual	20.9	No
Uncorrected	A	0.008	Rectangular	Maximum Residual	20.9	No
Bias, corrected or not	A	0.000219	Normal(1)	Std. Err of Avg. Bia	59	Yes
Resolution	A	0	Rectangular	From Gage Table	Infinite	Yes
Repeatability or GRR	A	0.00175	Normal(1)	Pooled Std. Dev.	55	Yes

UNCERTAINTY BUDGET

Uncertainty Contributor	Type	Plus or Minus	Probability Distribution	Divisor	Sensitivity Coefficient	Uncertainty Contribution	DF	1
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t for 95% Confidence
Coverage Factor k

2

Combined Uncertainty
Expanded Uncertainty

0
0

Gage Linearity Study

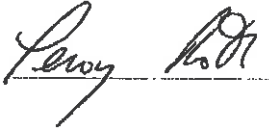


4/27/2015

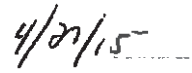
3

Comments

Approved by

A handwritten signature in black ink, appearing to read "Perry", written over a horizontal line.

Date

A handwritten date "4/27/15" in black ink, written over a horizontal line.

Sumitomo Electric Wiring Systems, Inc

Gage R&R Study

5/4/2015

1

Study Date 5/4/2015 Company Part No.: HW09-RET-06
 Gage ID 0003437 Part No.:
 Gage Desc 0 - 200 Caliper Part Desc.: HW09-RET-06
 Appraisers 3 Trials 3 Parts 10 Characteristic Length
 Study Type Long-AIAG Specification Limits Min 19.6 Max 20.2
 MSA Version 4 ☒ Approved Pp (or Ppk) Target: 6-Sigma Proc Variation

	Appr A Karen			Appr B Tabitha			Appr C Toni		
1	20.05	20.03	20.05	20.04	20.04	20.04	20.03	20.03	20.03
2	20.01	20.01	20.01	20.01	20.02	20.01	20.03	20.03	20.03
3	19.61	19.63	19.61	19.63	19.62	19.63	19.62	19.64	19.64
4	20.04	20.05	20.05	20.04	20.01	20.04	20.05	20.05	20.06
5	19.75	19.77	19.74	19.76	19.73	19.73	19.75	19.75	19.75
6	20.04	20.04	20.02	20.04	20.03	20.04	20.04	20.05	20.05
7	20.03	20.05	20.05	20.05	20.05	20.06	20.04	20.05	20.06
8	19.64	19.62	19.62	19.61	19.62	19.62	19.62	19.63	19.63
9	20.04	20.05	20.03	20.03	20.04	20.06	20.08	20.06	20.08
10	19.62	19.61	19.61	19.62	19.63	19.62	19.63	19.62	19.62

		% Contribution	% TV	% Tol		
Repeatability (EV)	0.008271	0.37%	6.1%	8.3%	R bar	0.014000
Reproducibility (AV)	0.004643	0.12%	3.4%	4.6%	UCL-R	0.036120
Appraiser x Part (INT)					Study Variation	0.136308
GRR	0.009485	0.48%	7.0%	9.5%	Total Variation (TV)	0.136308
Part-to-Part (PV)	0.135977	99.52%	99.8%	99.5%	Tolerance/6 (Tol):	0.1
number of distinct categories			20.2	14.8		

* Limit of individual R's (range values). An (*) is used to identify those sets of measurements that have a Range value that exceeds the UCL-R limit value. Correct by repeating those readings using the same appraiser and part or discard the values and recalculate the study results and the value UCL-R.

Comments

Approved by

[Signature]

Date

5/4/15

Gage R&R Study

Gage R&R Analysis Sheet

Study Date 5/4/2015 Gage ID 0003437 Gage Desc 0 - 200 Caliper Appraisers 3 Trials 3 Study Type Long-AIAG 4	Company Part No.: HW09-RET-06 Part No. Part Desc HW09-RET-06 Characteristic Length Specification Limits 19.6 20.2 6 Sigma Proc Var Pp (or Ppk) Target:
R bar A = 0.017000 X bar A = 19.882667 R bar B = 0.015000 X bar B = 19.882333 R bar C = 0.010000 X bar C = 19.891667 R bar = 0.014000 X bar Diff = 0.009333	Rp = 0.432222 Tol/6 = 0.100000

Measurement Unit Analysis	% Total Variation (TV)	% Tolerance																				
Repeatability - Equipment Variation (EV) EV = R bar x K1 = 0.008271 <table style="font-size: small;"> <tr><td>Trials</td><td>K1</td></tr> <tr><td>2</td><td>0.8862</td></tr> <tr><td>3</td><td>0.5908</td></tr> </table>	Trials	K1	2	0.8862	3	0.5908	% EV = 100 [EV / TV] = 6.1%	% EV = 100 [EV / (Tol / 6)] = 8.3%														
Trials	K1																					
2	0.8862																					
3	0.5908																					
Reproducibility - Appraiser Variation (AV) AV = $\sqrt{[(X \text{ bar Diff} \times K2)^2 - (EV^2 / n \times r)]}$ = 0.004643 <table style="font-size: small;"> <tr><td>Appraisers</td><td>2</td><td>3</td></tr> <tr><td>K2</td><td>0.7071</td><td>0.5231</td></tr> </table> Note: If a negative value is calculated under the square root sign, AV defaults to zero. n = number of parts r = number of trials	Appraisers	2	3	K2	0.7071	0.5231	% AV = 100 [AV / TV] = 3.4%	% AV = 100 [AV / (Tol / 6)] = 4.6%														
Appraisers	2	3																				
K2	0.7071	0.5231																				
Repeatability & Reproducibility (GRR) GRR = $\sqrt{(EV^2 + AV^2)}$ = 0.009485	%GRR = 100 [GRR / TV] = 7.0%	% GRR = 100 [GRR / (Tol / 6)] = 9.5%																				
Part Variation (PV) PV = R_p x K3 = 0.135977 <table style="font-size: small;"> <tr><td>Parts</td><td>K3</td></tr> <tr><td>2</td><td>0.7071</td></tr> <tr><td>3</td><td>0.5231</td></tr> <tr><td>4</td><td>0.4467</td></tr> <tr><td>5</td><td>0.4030</td></tr> <tr><td>6</td><td>0.3742</td></tr> <tr><td>7</td><td>0.3534</td></tr> <tr><td>8</td><td>0.3375</td></tr> <tr><td>9</td><td>0.3249</td></tr> <tr><td>10</td><td>0.3146</td></tr> </table>	Parts	K3	2	0.7071	3	0.5231	4	0.4467	5	0.4030	6	0.3742	7	0.3534	8	0.3375	9	0.3249	10	0.3146	% PV = 100 [PV / TV] = 99.8%	% PV = 100 [PV / (Tol / 6)] = 99.5%
Parts	K3																					
2	0.7071																					
3	0.5231																					
4	0.4467																					
5	0.4030																					
6	0.3742																					
7	0.3534																					
8	0.3375																					
9	0.3249																					
10	0.3146																					
ndc = 1.41(PV/GRR) = 20.2																						
Total Variation (TV) TV = $\sqrt{(GRR^2 + PV^2)}$ = 0.136308 If the 6 sigma process variation is known, then TV = [6 sigma process variation] / 6.00 and PV = SQRT[(TV^2) - (GRR)^2].																						

Approved by



Date

5/4/15

Gage R&R Study

Sumitomo Electric Wiring Systems, Inc

Gage Linearity Study

4/27/2015

1

Study Date 4/27/2015

Company Part No.: Weight

Gage ID 329079

Part No.

Gage Desc Force Gage

Part Desc Weight (grams)

NIST No.:

Characteristic Weight

Study Type Linearity & Bias

Use Range Method for Bias No

Appraiser L. Roth

☒ Approved

MSA Version

4

Specification Limits

Min

Max

Pp (or Ppk) Target

6-Sigma Proc Var

T
R
I
A
L
S

Part Reference Values

	1	2	3	4	5
	10	20	50	100	500.002
1	10	20	50	100	500
2	10	20	50	100	500
3	10	20	50	100	500.01
4	10	20	50	100	500
5	10	20	50	100	500
6	10	20	50	100.001	500
7	10	20	50	100	500
8	10	20	50	100	500
9	10	20	50	100	500.01
10	10	20	50.001	100	500
11	10	20	50	100	500
12	10	20	50	100	500
Avg. Bias/Part	0.000000	0.000000	0.000083	0.000083	-0.000333
Predicted Bias	0.000064	0.000056	0.000033	-0.000006	-0.000314

	Coefficient	DF	t Stat	t Critical	
Goodness of Fit	0.007161	Intercept	0.000072	58.000000	.26164 2.00172 OK
Standard Error	0.001706	Slope	-0.000001	58.000000	-.64679 2.00172 OK
SE % of TV		Upper Fitted Confidence Limit at worst point		0.000498	OK
SE % of Tol		Lower Fitted Confidence Limit at worst point		-0.000509	OK

Gage Linearity Study

Bias

	1	2	3	4	5
1	0.000000	-0.000000	0.000000	0.000000	-0.002000
2	0.000000	-0.000000	0.000000	0.000000	-0.002000
3	0.000000	0.000000	0.000000	0.000000	0.008000
4	0.000000	0.000000	0.000000	0.000000	-0.002000
5	0.000000	0.000000	0.000000	0.000000	-0.002000
6	0.000000	0.000000	0.000000	0.001000	-0.002000
7	0.000000	-0.000000	0.000000	0.000000	-0.002000
8	0.000000	0.000000	0.000000	0.000000	-0.002000
9	0.000000	-0.000000	0.000000	0.000000	0.008000
10	0.000000	0.000000	0.001000	0.000000	-0.002000
11	-0.000000	0.000000	0.000000	0.000000	-0.002000
12	0.000000	0.000000	0.000000	0.000000	-0.002000

	Coefficient			DF	EV % of TV
	Lower	Upper			
Avg. Bias	-0.000033	-0.000472	0.000405	59.000000	
Standard Error	0.000219	Acceptable		Std. Dev 0.001697	EV % of Tol

UNCERTAINTY SETUP

Uncertainty Contributor	Type	Plus or Minus	Probability Distribution	Based On	DF	Include
Linearity						
Linearity Bias Corrected	A	0.008314	Rectangular	Maximum Residual	20.9	Yes
Only Bias corrected	A	0.008333	Rectangular	Maximum Residual	20.9	No
Uncorrected	A	0.008	Rectangular	Maximum Residual	20.9	No
Bias, corrected or not	A	0.000219	Normal(1)	Std. Err of Avg. Bla	59	Yes
Resolution	A	0	Rectangular	From Gage Table	Infinite	Yes
Repeatability or GRR	A	0.00175	Normal(1)	Pooled Std. Dev.	55	Yes

UNCERTAINTY BUDGET

Uncertainty Contributor	Type	Plus or Minus	Probability Distribution	Divisor	Sensitivity Coefficient	Uncertainty Contribution	DF	1
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t for 95% Confidence
Coverage Factor k 2

Combined Uncertainty
Expanded Uncertainty 0

Gage Linearity Study



4/27/2015

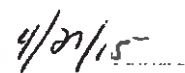
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Comments

Approved by

A handwritten signature in black ink, appearing to read "Perry", written over a horizontal dashed line.

Date

A handwritten date "4/27/15" in black ink, written over a horizontal dashed line.

MESSRS PN 8240-0426

CERTIFICATE OF INSPECTION

ORDER SHINSHO CORPORATION NAGOYA SHITEN

CUSTOMER SUMITOMO ELECTRIC WIRING SYSTEMS, INC

COMMODITY TEC460 STRIP

DATE 2022-01-17

U99621

SPECIFICATION				SIZE OF ARTICLE				ORDER QUANTITY MASS			
5-4255C				0.3 X 33. ACQIL							
TRC460 H				2-43051							
TEST ITEM				TENSION TEST				SPRING			
S-COMTENSURES				TENSILE STRENGTH				LIMIT			
REQUIREMENT				TENSILE STRENGTH				TENSILE STRENGTH			
LOT No.				TENSILE STRENGTH				TENSILE STRENGTH			
N2225				TENSILE STRENGTH				TENSILE STRENGTH			
1				TENSILE STRENGTH				TENSILE STRENGTH			
2				TENSILE STRENGTH				TENSILE STRENGTH			
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50				TENSILE STRENGTH				TENSILE STRENGTH			
51				TENSILE STRENGTH				TENSILE STRENGTH			
52				TENSILE STRENGTH				TENSILE STRENGTH			
53				TENSILE STRENGTH				TENSILE STRENGTH			
54				TENSILE STRENGTH				TENSILE STRENGTH			
55				TENSILE STRENGTH				TENSILE STRENGTH			
56				TENSILE STRENGTH				TENSILE STRENGTH			
57				TENSILE STRENGTH				TENSILE STRENGTH			
58				TENSILE STRENGTH				TENSILE STRENGTH			
59				TENSILE STRENGTH				TENSILE STRENGTH			
60				TENSILE STRENGTH				TENSILE STRENGTH			
61				TENSILE STRENGTH				TENSILE STRENGTH			
62				TENSILE STRENGTH				TENSILE STRENGTH			
63				TENSILE STRENGTH				TENSILE STRENGTH			
64				TENSILE STRENGTH				TENSILE STRENGTH			
65				TENSILE STRENGTH				TENSILE STRENGTH			
66				TENSILE STRENGTH				TENSILE STRENGTH			
67				TENSILE STRENGTH				TENSILE STRENGTH			
68				TENSILE STRENGTH				TENSILE STRENGTH			
69				TENSILE STRENGTH				TENSILE STRENGTH			
70				TENSILE STRENGTH				TENSILE STRENGTH			
71				TENSILE STRENGTH				TENSILE STRENGTH			
72				TENSILE STRENGTH				TENSILE STRENGTH			
73				TENSILE STRENGTH				TENSILE STRENGTH			
74				TENSILE STRENGTH				TENSILE STRENGTH			
75				TENSILE STRENGTH				TENSILE STRENGTH			
76				TENSILE STRENGTH				TENSILE STRENGTH			
77				TENSILE STRENGTH				TENSILE STRENGTH			
78				TENSILE STRENGTH				TENSILE STRENGTH			
79				TENSILE STRENGTH				TENSILE STRENGTH			
80				TENSILE STRENGTH				TENSILE STRENGTH			
81				TENSILE STRENGTH				TENSILE STRENGTH			

CPK DATA

ORGANIZATION: SUMITOMO ELECTRIC WIRING SYSTEMS (PLT.5)
 PART Name/Desc: **TER-US280F2L-SN**
 PART NO (s): **8240-0426**
 Mold #: **TD078-2L**

Tested by/Date: Robin Casada 4/14/2015
 Design Rec. Change level/date: EU5T-14474-EA 12/3/15
 Eng. Change Documents: NA

CAVITY #↓									
SE1	4.30		2.95		19.50				
	+0.20	-0.20	+0.20	-0.20	+0.30	-0.30			
1	4.25		2.91		19.41				
2	4.25		2.91		19.40				
3	4.24		2.91		19.38				
4	4.23		2.91		19.40				
5	4.24		2.91		19.38				
6	4.24		2.91		19.36				
7	4.24		2.91		19.36				
8	4.24		2.91		19.37				
9	4.24		2.91		19.42				
10	4.24		2.91		19.36				
11	4.24		2.90		19.39				
12	4.25		2.91		19.38				
13	4.25		2.91		19.43				
14	4.24		2.91		19.37				
15	4.25		2.91		19.38				
16	4.24		2.91		19.40				
17	4.25		2.91		19.37				
18	4.24		2.91		19.38				
19	4.24		2.91		19.38				
20	4.25		2.91		19.37				
21	4.24		2.91		19.38				
22	4.25		2.91		19.38				
23	4.24		2.91		19.37				
24	4.25		2.91		19.38				
25	4.23		2.91		19.38				
26	4.24		2.91		19.36				
27	4.25		2.91		19.37				
28	4.24		2.91		19.38				
29	4.25		2.91		19.37				
30	4.25		2.91		19.38				

CPK DATA

ORGANIZATION: SUMITOMO ELECTRIC WIRING SYSTEMS (PLT.5)

PART Name/Desc: TER-US280F2L-SNPART NO (s): 8240-0426Mold #: TD078-2LTested by/Date: Robin Casada 4/14/2015Design Rec. Change level/date: EU5T-14474-EA 12/3/15Eng. Change Documents: NA

CAVITY #:

SE1	4.30		2.95		19.50							
	+0.20	-0.20	+0.20	-0.20	+0.30	-0.30						
31	4.25		2.91		19.37							
32	4.25		2.91		19.37							
33	4.25		2.91		19.40							
34	4.25		2.91		19.37							
35	4.24		2.91		19.39							
36	4.24		2.91		19.39							
37	4.25		2.91		19.38							
38	4.25		2.91		19.38							
39	4.25		2.91		19.39							
40	4.25		2.91		19.36							
41	4.25		2.91		19.38							
42	4.23		2.91		19.41							
43	4.24		2.91		19.38							
44	4.24		2.91		19.39							
45	4.25		2.91		19.38							
46	4.25		2.91		19.36							
47	4.25		2.91		19.36							
48	4.25		2.91		19.42							
49	4.25		2.91		19.36							
50	4.25		2.91		19.34							
51	4.25		2.91		19.36							
52	4.25		2.91		19.36							
53	4.25		2.91		19.37							
54	4.24		2.91		19.38							
55	4.25		2.91		19.36							
56	4.25		2.91		19.38							
57	4.25		2.91		19.36							
58	4.25		2.91		19.38							
59	4.25		2.91		19.37							
60	4.25		2.91		19.38							

CPK DATA

ORGANIZATION: SUMITOMO ELECTRIC WIRING SYSTEMS (PLT.5)

PART Name/Desc: **TER-US280F2L-SN**PART NO (s): **8240-0426**Mold #: **TD078-2L**Tested by/Date: Robin Casada 4/14/2015Design Rec. Change level/date: EU5T-14474-EA 12/3/15Eng. Change Documents: NACAVITY #: **1**

SE1	4.30		2.95		19.50							
	+0.20	-0.20	+0.20	-0.20	+0.30	-0.30						
61	4.24		2.91		19.36							
62	4.25		2.91		19.37							
63	4.25		2.91		19.37							
64	4.24		2.91		19.38							
65	4.24		2.91		19.36							
66	4.25		2.91		19.37							
67	4.25		2.91		19.37							
68	4.25		2.91		19.38							
69	4.25		2.91		19.39							
70	4.25		2.91		19.37							
71	4.25		2.91		19.38							
72	4.20		2.91		19.38							
73	4.25		2.91		19.36							
74	4.25		2.91		19.38							
75	4.25		2.91		19.36							
76	4.24		2.91		19.37							
77	4.25		2.91		19.37							
78	4.25		2.91		19.36							
79	4.25		2.91		19.36							
80	4.25		2.91		19.39							
81	4.25		2.91		19.37							
82	4.25		2.91		19.36							
83	4.25		2.91		19.40							
84	4.25		2.91		19.38							
85	4.24		2.91		19.37							
86	4.25		2.91		19.37							
87	4.25		2.91		19.38							
88	4.25		2.91		19.37							
89	4.25		2.91		19.36							
90	4.25		2.91		19.38							

CPK DATA

Page 4 of 4

ORGANIZATION: SUMITOMO ELECTRIC WIRING SYSTEMS (PLT.5)

PART Name/Desc: **TER-US280F2L-SN**PART NO (s): **8240-0426**Mold #: **TD078-2L**Tested by/Date: Robin Casada 4/14/2015Design Rec. Change level/date: EU5T-14474-EA D6 12/3/15Eng. Change Documents: NACAVITY #: **1**

SE1	4.30		2.95		19.50							
	+0.20	-0.20	+0.20	-0.20	+0.30	-0.30						
91	4.25		2.91		19.36							
92	4.25		2.91		19.37							
93	4.24		2.91		19.37							
94	4.25		2.91		19.38							
95	4.25		2.91		19.36							
96	4.25		2.91		19.36							
97	4.25		2.90		19.36							
98	4.24		2.91		19.36							
99	4.25		2.91		19.37							
100	4.25		2.91		19.36							

average	4.25	2.91	19.38
minimum	4.20	2.90	19.34
maximum	4.25	2.91	19.43
range	0.05	0.01	0.09
std dev	0.01	0.00	0.02

LSL	4.10	2.75	19.20
NOM	4.30	2.95	19.50
USL	4.50	3.15	19.80

CPK	6.86713358	37.85690296	3.862478832
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WORK INSTRUCTION

AREA:	QUALITY ASSURANCE LAB
TITLE	LABORATORY SCOPE - SCOTTSVILLE (SV5 & SV5 Building 2)

PURPOSE: To summarize the testing capabilities available at Scottsville Plant (SV5 & Building 2), and to clarify the equipment, tests performed, standards, recording method and reaction plan.	APPLICATION: Scottsville (SV5 & Building 2)
	RULE ENFORCER: QA Coordinator / Above

SV5 Tests Performed

TESTS PERFORMED	EQUIPMENT USED	TEST METHODS / STANDARD	RECORDING METHOD	REACTION METHOD
Melt Flow Rate	Tinius Olsen Extrusion Plastometer	QRW - MELTFLOW	Melt Index Record	Reject Tag Procedure
Waterproof Test	Waterproof Tester	QAW - WATERPROOFTEST	Inspection Data Sheet	Reject Tag Procedure
Moisture Analysis (Reference Only)	Moisture Tester	F-A-SV5-010	Moisture Test Data Sheet	Reject Tag Procedure
Insertion / Retention Testing	Force Gage	QAW - INSERTRETPROC	Inspection Data Sheet	Reject Tag Procedure
Dimensional Measurement	Profile / Caliper / Micrometer / Depth Gage	Inspection Instruction Sheet	Inspection Data Sheet	Reject Tag Procedure
Part Weight	Scale	Inspection Instruction Sheet	Inspection Data Sheet	Reject Tag Procedure
Freeze Test	Freezer	SWS Inspection Standard	Inspection Data Sheet	Reject Tag Procedure

SV5 (Building 2) Tests Performed

TESTS PERFORMED	EQUIPMENT USED	TEST METHODS / STANDARD	RECORDING METHOD	REACTION METHOD
Hardness Test	Hardness Tester	H-A-001	Hardness Test Data Sheet	Reject Tag Procedure
Insertion / Retention Test	Force Gage	QAW - INSERTRETPROC	Inspection Data Sheet	Reject Tag Procedure
Contact Force Test	Contact Force Gage	MSW-Force Gage	Inspection Data Sheet	Reject Tag Procedure
Dimensional Measurement	Profile / Keyence System / OGP / Caliper / Micrometer / Depth Gage / Slip Gages	SWS Inspection Standard	Inspection Data Sheet	Reject Tag Procedure

WORK INSTRUCTION

AREA:	QUALITY ASSURANCE LAB
TITLE	LABORATORY SCOPE - SCOTTSVILLE (SV5 & SV5 Building 2)

Equipment Calibrations

	EQUIPMENT USED	TEST METHODS / STANDARD	RECORDING METHOD	REACTION METHOD
Calipers, Micrometers, Depth Gages, Weigh Scales, other process tools/jigs.	Certified Gages (Gage Blocks & Weights)	Per Calibration Procedure	Calibration Record and Gagetrak	Reject Tag Procedure
Force Gages	Certified Weights			
Freezer	Certified Meter			
Melt Indexer	Outside Vendor			
Moisture Analyzer	Outside Vendor			
Water Pressure Gage	Outside Vendor			
Hardness Tester	Outside Vendor			
Optical Comparator (Profile)	Outside Vendor			
Keyence Measurement Scope	Outside Vendor			
OGP	Outside Vendor			