

Customer: ROMAN MELNYK TEST ACCOUNT
35 VANTAGE POINT DRIVE
ROCHESTER, NY 14624



ANAB AC-2489

PO Number: ABC123

Certificate/SO Number: 1-FY5AR-160-1 Revision 2

Manufacturer: Fluke Corporation
Model Number: 87 V
Description: Multimeter, Digital
Serial Number: ABC123
ID: 54321

As-Found: In Tolerance, Pass Acceptance
As-Left: In Tolerance, Pass Acceptance

Issue Date: Mar 10, 2021
Calibration Date: Mar 16, 2021
Due Date: Mar 16, 2022

Calibrated To: Manufacturer Specification
Calibration Procedure: 1-AC08977-28

This calibration conforms to ISO/IEC 17025:2017, ANSI/NCSL Z540-1-1994, ISO 9001:2015, and ISO 10012:2003. When specified contractually, the requirements of ISO TS16949:2009, 10CFR21, 10CFR50 App. B, ASME NQA-1:2012, and ANSI/NCSL Z540.3-2006 (R2013) are also covered. Standards are traceable to the SI either through the National Institute of Standards & Technology (NIST), the National Research Council of Canada (NRC), other national measurement institutes (NMI) that are signatories to the CIPM Mutual Recognition Arrangement, natural physical constants, intrinsic standards, or ratio type measurements. The results of this report relate only to the item calibrated or tested. Reported data is valid at the time of calibration at the environmental conditions noted. This certificate shall not be reproduced except in full, without the written consent of Transcat Inc. Uncertainties are reported with a coverage factor k=2, providing a level of confidence of approximately 95%. Guard banding has been applied using Transcat's PCS (Probability of Compliance to Specification) service feature. The PCS threshold, which defines the client's acceptable level of measurement risk, has been set in accordance with client requirements. Unless otherwise specified, a default threshold of 98% PCS has been applied. Measurements with PCS values at or above the established threshold are considered within Acceptance Limits (Pass). Measurements with PCS values below the threshold are considered outside Acceptance Limits (Fail).

Calibrated At:
35 Vantage Point Dr
Rochester, NY 14624

Facility Responsible:
35 Vantage Point Dr
Rochester, NY 14624
800-828-1470



Date Received: November 09, 2020
Service Level : R12

Calibrated By:
 Electronically Signed By:
Kevin Kita

Kevin Kita Mar 16, 2021
Calibration Technician 12:00:53 -04:00

Reviewed By:
 Electronically Signed By:
Jared Payne for

Kevin OGrady Mar 16, 2021
Lab Manager 12:01:00 -04:00

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As Found/As Left Data

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AC Volts Measure											
600 mV Range	330.0mVrms	±(0.7% Rdg + 4 LSD)	327.3	332.7	329.5 mVrms		8.6e-002	1.7e-001	mVrms	100.0	31.5 : 1
		Acceptance Limits:	327.4	332.6							
	60Hz										
	600.0mVrms	±(2% Rdg + 20 LSD)	586.0	614.0	602.4 mVrms		1.4e-001	2.0e-001	mVrms	100.0	100.0 : 1
		Acceptance Limits:	586.1	613.9							
	13kHz										
6 V Range	3.300Vrms	±(0.7% Rdg + 2 LSD)	3.275	3.325	3.295 Vrms		8.6e-004	1.7e-003	Vrms	100.0	29.2 : 1
		Acceptance Limits:	3.276	3.324							
	60Hz										
	3.300Vrms	±(2% Rdg + 20 LSD)	3.214	3.386	3.287 Vrms		1.1e-003	1.8e-003	Vrms	100.0	79.3 : 1
		Acceptance Limits:	3.215	3.385							
	20kHz										
60 V Range	33.00Vrms	±(0.7% Rdg + 2 LSD)	32.75	33.25	32.96 Vrms		6.5e-003	1.5e-002	Vrms	100.0	38.5 : 1
		Acceptance Limits:	32.76	33.24							
	60Hz										
	33.00Vrms	±(2% Rdg + 20 LSD)	32.14	33.86	32.87 Vrms		1.1e-002	1.8e-002	Vrms	100.0	77.3 : 1
		Acceptance Limits:	32.15	33.85							
	20kHz										
600 V Range	330.0Vrms	±(0.7% Rdg + 2 LSD)	327.5	332.5	329.6 Vrms		8.5e-002	1.5e-001	Vrms	100.0	29.4 : 1
		Acceptance Limits:	327.6	332.4							
	60Hz										
	330.0Vrms	±(2% Rdg + 4 LSD)	323.0	337.0	329.8 Vrms		7.2e-002	1.4e-001	Vrms	100.0	96.8 : 1
		Acceptance Limits:	323.1	336.9							
	2.5kHz										
1000 V Range	500Vrms	±(0.7% Rdg + 2 LSD)	494	506	500 Vrms		1.2e-001	1.2e+000	Vrms	100.0	48.0 : 1

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AC Volts Measure											
		Acceptance Limits:	494	506							
	60Hz										
	1000Vrms	±(1% Rdg + 4 LSD)	986	1014	1002 Vrms		2.4e-001	1.2e+000	Vrms	100.0	57.8 : 1
		Acceptance Limits:	986	1014							
	1kHz										
Frequency Measure											
600 mV Range	99.95kHz	±(0.005% Rdg + 1 LSD)	99.94	99.96	99.95 kHz		1.9e-004	1.2e-002	kHz	100.0	51.3 : 1
		Acceptance Limits:	99.94	99.96							
	150mVrms										
	199.50kHz	±(0.005% Rdg + 1 LSD)	199.48	199.52	199.50 kHz		3.9e-004	1.2e-002	kHz	100.0	51.5 : 1
		Acceptance Limits:	199.48	199.52							
	150mVrms										
6 V Range - Sensitivity	99.95kHz	±(0.005% Rdg + 1 LSD)	99.94	99.96	99.95 kHz		1.9e-004	1.2e-002	kHz	100.0	51.3 : 1
		Acceptance Limits:	99.94	99.96							
	0.7Vrms										
60 V Range - Sensitivity	99.95kHz	±(0.005% Rdg + 1 LSD)	99.94	99.96	99.95 kHz		1.9e-004	1.2e-002	kHz	100.0	51.3 : 1
		Acceptance Limits:	99.94	99.96							
	7Vrms										
6 V Range - Trigger Level	1000.0Hz	±(0.005% Rdg + 1 LSD)	999.8	1000.2	1000.0 Hz		2.0e-003	1.2e-001	Hz	100.0	100.0 : 1
		Acceptance Limits:	999.8	1000.2							
	3.4Vp-p										
Duty Cycle											
Duty Cycle - 6 V DC Range	1kHz	±(0.3 %)	49.7	50.3	50.0 %		9.8e-005	1.2e-001	%	100.0	100.0 : 1
		Acceptance Limits:	49.7	50.3							
	5Vp-p										

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DC Volts Measure											
6 V Range	3.300V	±(0.05% Rdg + 1 LSD)	3.297	3.303	3.300 V		5.0e-005	1.2e-003	V	100.0	59.5 : 1
		Acceptance Limits:	3.297	3.303							
60 V Range	33.00V	±(0.05% Rdg + 1 LSD)	32.97	33.03	33.00 V		6.3e-004	1.2e-002	V	100.0	47.8 : 1
		Acceptance Limits:	32.97	33.03							
600 V Range	330.0V	±(0.05% Rdg + 1 LSD)	329.7	330.3	330.0 V		6.0e-003	1.2e-001	V	100.0	50.1 : 1
		Acceptance Limits:	329.7	330.3							
1000 V Range	1000V	±(0.05% Rdg + 1 LSD)	998	1002	1000 V		1.6e-002	1.2e+000	V	100.0	100.0 : 1
		Acceptance Limits:	998	1002							
600 mV Range	33.0mV	±(0.1% Rdg + 1 LSD)	32.9	33.1	33.0 mV		1.3e-003	1.2e-001	mV	100.0	76.7 : 1
		Acceptance Limits:	32.9	33.1							
	330.0mV	±(0.1% Rdg + 1 LSD)	329.6	330.4	330.0 mV		4.6e-003	1.2e-001	mV	100.0	86.8 : 1
		Acceptance Limits:	329.6	330.4							

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Resistance 2 Wire Comp Measure											
600 Ohm Range	330.0Ohm	±(0.2% Rdg + 2 LSD)	329.1	330.9	330.1 Ohm		2.4e-002	1.4e-001	Ohm	100.0	36.8 : 1
		Acceptance Limits:	329.1	330.9							
6 kOhm Range	3.300kOhm	±(0.2% Rdg + 1 LSD)	3.292	3.308	3.300 kOhm		2.4e-004	1.4e-003	kOhm	100.0	32.7 : 1
		Acceptance Limits:	3.292	3.308							
60 kOhm Range	33.00kOhm	±(0.2% Rdg + 1 LSD)	32.92	33.08	33.02 kOhm		2.4e-003	1.4e-002	kOhm	100.0	32.7 : 1
		Acceptance Limits:	32.92	33.08							
600 kOhm Range	330.0kOhm	±(0.6% Rdg + 1 LSD)	327.9	332.1	330.3 kOhm		2.6e-002	1.4e-001	kOhm	100.0	81.9 : 1
		Acceptance Limits:	327.9	332.1							
6 MOhm Range	3.300MOhm	±(0.6% Rdg + 1 LSD)	3.279	3.321	3.303 MOhm		5.4e-004	1.4e-003	MOhm	100.0	39.2 : 1
		Acceptance Limits:	3.280	3.321							
50 MOhm Range	30.00MOhm	±(1% Rdg + 3 LSD)	29.67	30.33	30.09 MOhm		7.9e-003	1.5e-002	MOhm	100.0	41.6 : 1
		Acceptance Limits:	29.68	30.32							
60 nS Range (Open)	0.00MOhm	±(1% Rdg + 30 LSD)	-0.30	0.30	-0.05 nS		0.0e+000	1.2e-002	nS		4 : 1
		Acceptance Limits:	-0.30	0.30							
60 nS Range	100MOhm	±(1% Rdg + 30 LSD)	9.60	10.40	9.93 nS		4.6e-003	1.3e-002	nS	100.0	87.2 : 1
		Acceptance Limits:	9.60	10.40							
Diode Test											
Diode Test	3.000V	±(2% Rdg + 1 LSD)	2.939	3.061	3.000 V		2.9e-005	1.2e-003	V	100.0	100.0 : 1
		Acceptance Limits:	2.939	3.061							
A AC Measure											
6 A Range	3.000A	±(1% Rdg + 2 LSD)	2.968	3.032	2.999 A		3.0e-003	3.4e-003	A	100.0	10.7 : 1
		Acceptance Limits:	2.971	3.029							
	60Hz										

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A DC Measure											
6 A Range	3.000A	±(0.2% Rdg + 4 LSD)	2.990	3.010	3.001 A		1.9e-003	2.3e-003	A	100.0	5.2 : 1
		Acceptance Limits:	2.992	3.008							
10 A Range	10.00A	±(0.2% Rdg + 2 LSD)	9.96	10.04	10.00 A		5.5e-003	1.3e-002	A	100.0	7.3 : 1
		Acceptance Limits:	9.97	10.03							
mA AC Measure											
60 mA Range	33.00mA	±(1% Rdg + 2 LSD)	32.65	33.35	32.97 mA		2.7e-002	3.2e-002	mA	100.0	13.0 : 1
		Acceptance Limits:	32.68	33.32							
	60Hz										
400 mA Range	330.0mA	±(1% Rdg + 2 LSD)	326.5	333.5	330.0 mA		2.1e-001	2.6e-001	mA	100.0	16.7 : 1
		Acceptance Limits:	326.7	333.3							
	60Hz										
mA DC Measure											
60 mA Range	33.00mA	±(0.2% Rdg + 4 LSD)	32.89	33.11	33.00 mA		4.5e-003	1.4e-002	mA	100.0	24.6 : 1
		Acceptance Limits:	32.89	33.11							
400 mA Range	330.0mA	±(0.2% Rdg + 2 LSD)	329.1	330.9	329.9 mA		8.2e-002	1.6e-001	mA	100.0	10.9 : 1
		Acceptance Limits:	329.2	330.8							
µA AC Measure											
600 µA Range	330.0µA	±(1% Rdg + 2 LSD)	326.5	333.5	329.9 µA		3.8e-001	4.0e-001	µA	100.0	9.3 : 1
		Acceptance Limits:	326.9	333.1							
	60Hz										
6000 µA Range	3300µA	±(1% Rdg + 2 LSD)	3265	3335	3299 µA		2.8e+000	3.3e+000	µA	100.0	12.7 : 1
		Acceptance Limits:	3268	3332							
	60Hz										

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µA DC Measure											
600 µA Range	330.0µA	±(0.2% Rdg + 4 LSD)	328.9	331.1	330.0 µA		6.7e-002	1.6e-001	µA	100.0	16.4 : 1
		Acceptance Limits:	329.0	331.0							
6000 µA Range	3300µA	±(0.2% Rdg + 2 LSD)	3291	3309	3300 µA		5.1e-001	1.4e+000	µA	100.0	17.5 : 1
		Acceptance Limits:	3292	3308							
Capacitance Measure											
10 nF Range	0.26nF	≥ (0.21 nF) ; ≤ (0.31 nF)	0.21	0.31	0.26 nF		0.0e+000	1.2e-002	nF		4 : 1
		Acceptance Limits:	0.21	0.31							
100 nF Range	5.0nF	±(1% Rdg + 2 LSD)	4.7	5.3	5.0 nF		1.6e-002	1.3e-001	nF	100.0	18.3 : 1
		Acceptance Limits:	4.7	5.3							
100 µF Range	9.5µF	±(1% Rdg + 2 LSD)	9.2	9.8	9.5 µF		2.5e-002	1.3e-001	µF	100.0	11.8 : 1
		Acceptance Limits:	9.2	9.8							
Low Pass Filter											
Low Pass Filter - 1000 V Range	400Vrms	-(6% Rdg + 4 LSD) ; +(1% Rdg + 4 LSD)	372	408	381 Vrms		1.0e-001	1.2e+000	Vrms	100.0	100.0 : 1
		Acceptance Limits:	372	408							
	400Hz										
(Not spec'd - Approx 226 to 340Vrms)	400Vrms				289 Vrms		7.2e-002	1.2e+000	Vrms		4 : 1
	800Hz										
Low Pass Filter @ 800Hz											
Filter follows an expected roll-off curve.			P	P	P						

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Peak MIN/MAX											
MAX - 6 VDC Range	6Vp-p	±(0.103 V)	3.897	4.103	4.025 V		5.6e-004	1.4e-003	V	100.0	100.0 : 1
		Acceptance Limits:	3.898	4.102							
	2kHz										
MIN	6Vp-p	±(0.102 V)	-2.102	-1.898	-2.009 V		2.8e-004	1.3e-003	V	100.0	100.0 : 1
		Acceptance Limits:	-2.102	-1.898							
	2kHz										
Temperature Measure											
Type K (ITS90)	0.0°C	±(1% Rdg + 10 LSD)	-1.0	1.0	0.1 °C		0.0e+000	1.2e-001	°C		4 : 1
		Acceptance Limits:	-1.0	1.0							
	100.0°C	±(1% Rdg + 10 LSD)	98.0	102.0	100.1 °C		1.6e-001	2.0e-001	°C	100.0	12.5 : 1
		Acceptance Limits:	98.2	101.8							
Function Check											
Backlight Comes On			P	P	P						
Backlight Intensifies			P	P	P						
Backlight Off			P	P	P						

Field not applicable.

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Traceable Standards

Asset	Manufacturer	Model Number	Description	Cal Date	Due Date	Traceability Number	Use
5312	Fluke Corporation	5520A	Multifunction Calibrator	27-Aug-20	27-Aug-21	5-&5312-38-2	AF/AL

The use of the standard is defined as: AF - used for as-found readings, AL - used for as-left readings.

Environmental Data

Temperature	Relative Humidity	Temp / RH Asset
71.40°F /21.89°C	53.00%	3133A