



INDEPENDENT TESTING AGENCY

J.M. Lawson Group, Inc.

August 15, 2019

Key Systems Electric, Inc.
10839 Philadelphia Road
White Marsh, MD 21162

ATTN: Mr. Jeff Morris

REF: Annapolis Library
Ground Fault Acceptance Testing (Job # C18-250)
ITA Project No. 19-383

Dear Mr. Morris,

Thank you for the opportunity to perform our testing services at 1410 West Street located in Annapolis, MD on Thursday, August 15, 2019.

Our electrical testing was conducted to the project specifications provided by NEC Section 230-95C. The testing was concentrated on the main ground fault circuit breaker (800 amp) installed at the facility by your firm.

The report should be self-explanatory, but if you have any questions or if we can be of further assistance, please call our office.

Again, thank you for the opportunity to provide our services on this project. We look forward to effectively serving your testing needs in the future.

Sincerely,

J. Michael Lawson
President

152 Blades Lane, Suite L
Glen Burnie, MD 21060
(410) 590-2200



152 Blades Lane Suite L
Glen Burnie, MD 21060

GROUND FAULT INSPECTION AND TEST DATA

DATE: 8/15/19
CUSTOMER: Key Systems, Inc.
LOCATION: Annapolis, MD

JOB NO: 19-383.1
PROJECT: Annapolis Library
TECH: KS / FG

IDENTIFICATION: Main		SUBSTATION: MDP	
MANUFACTURER: Eaton	TYPE: CMDL	SERIAL NO.: 6636 C12 H3U	
CAT. NO.: CMDL3800F	AMPERE RATING: 800A	VOLTAGE: 480Y/277	
SYSTEM INFORMATION:	PHASE: 3	WIRE: 4	

GROUND FAULT SENSOR / RELAY DATA

SENSOR TYPE: Neutral C.T.	RELAY TYPE:
SENSOR FREQUENCY: 60 HZ	RELAY FREQUENCY: 60 HZ
SENSOR VOLTAGE: 120V	RELAY VOLTAGE: 120V
SENSOR AMPS: 0.3 (240A)	RELAY AMPS (max.): 800A

GROUND FAULT SETTINGS

RANGE AMPS: 0.2 - 1.0 (160-800A)	RANGE TIME: J - R (Inst - 300 MS)
AS FOUND AMPS: 1.0 (800A)	AS FOUND TIME: J (Inst.)
AS LEFT AMPS: 0.3 (240A)	AS LEFT TIME: K (120 MS)

GROUND FAULT TEST DATA

CURRENT PICKUP TEST DATA:	TIME TEST DATA (@ 150% of p/u) 360A
A phase sensor p/u: 239A	A phase time: 0.11
B phase sensor p/u: 241A	B phase time: 0.10
C phase sensor p/u: 241A	C phase time: 0.09
Neutral sensor p/u: 242A	Neutral time: 0.09

POLARITY VERIFICATION / PHASE TO NEUTRAL SENSOR:

Phase to Neutral:	Test Connection / Expected Results	Results
A to neutral	Connect test input to line side of breaker; through breaker; load side of breaker	No Trip
B to neutral	jumpered to load side of neutral sensor; line side of neutral sensor connection	No Trip
C to neutral	back to test set.	No Trip

Test Current (200 % of Pickup): 480A

REMARKS: All tests satisfactory.

EQUIPMENT USED: HC-2	CAL. NO: 144668
TEMP: 73 F	HUMIDITY: 93%

TESTING EVALUATION

-- Annapolis Library --

Main ground fault circuit breaker / disconnect tested within applicable manufacturer's published specifications and should be considered acceptable for continued service.

Ref. NEC Section 230-95C (Ground Fault Performance Testing).

Test Date: 8/15/2019

Job No. C18-250