

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
B	1ST COMPUTERIZED (LOST)	11/7/05	PW/HG
C	2ND COMPUTERIZED	1MAY 08	VVN/H. G.
D	UPDATE NEW ARGA CONTROLS LOGO	26JUN12	D. JAMES

SPECIFICATIONS

- BATTERY INPUT:** 90 TO 180 VDC, 3VA.
- GROUND RESISTORS:** 30K ± 1% FROM EACH BUS TO GROUND.
- VOLTAGE INDICATION:** 0 TO ± 199.9 VDC IN .6" BRIGHT RED LED DIGIT AND DECIMAL POINT. ACCURACY IS ± .2VDC.
- RANGES:**
 - +BUS TO GROUND (+ TO \equiv)
 - BUS TO GROUND (- TO \equiv)
 - GROUND FAULT VOLTAGE (FAULT)
 - BATTERY VOLTAGE (BAT)
- SCANNING:** AUTOMATICALLY SCANS EACH RANGE. EACH READING IS 3 SEC. SCANNING STOPS ON INDICATED VALUE WHEN SCAN/MANUAL IS PUSHED. SCAN RESUMES ON NEXT READING WHEN PUSHED AGAIN. LED LIGHTS INDICATING RANGE BEING SHOWN. SCANNING STOPS AND DISPLAYS ALARM VALUES.
- ALARMS:** (NOT SCANNED)
 - " + FAULT" RELAY ENERGIZES AND LATCHES WHEN THE + FAULT VOLTAGE EXCEEDS THE + SET VALUE FOR THE TIME SETTING. THE "ALARM" LED LIGHTS. SET RANGE IS 13.0 TO 100.0V.
 - " - FAULT" RELAY ENERGIZES AND LATCHES WHEN THE - FAULT VOLTAGE EXCEEDS THE - SET VALUE FOR THE TIME SETTING. THE "ALARM" LED LIGHTS. SET RANGE IS -13.0 TO -100.0V.
 - "HI BATTERY" RELAY ENERGIZES AND LATCHES WHEN THE BATTERY VOLTAGE EXCEEDS THE "HI" SET VALUE FOR THE TIME SETTING. THE "ALARM" LED LIGHTS. SET RANGE IS 125.0 TO 150.0V.
 - "LO BATTERY" RELAY DEENERGIZES AND LATCHES WHEN THE BATTERY VOLTAGE IS BELOW THE "LO" SET VALUE FOR THE TIME SETTING. THE "ALARM" LED LIGHTS. SET RANGE IS 100.0 TO 130.0V.
- TIME DELAY:** CAN BE SET FROM 5 TO 60 SECONDS.
- RESET:** PANEL PUSH BUTTON OR REMOTE CONTACT CLOSURE WILL RESET AN ALARM PROVIDED THE CAUSE IS REMOVED.
- CONTACT RATING:** 2A AT 120 VAC OR 28 VDC.
- LIMIT SETTING:** DISPLAY OF LIMIT SETTING BY PUSHING "LIMIT" ON FRONT PANEL WHEN RANGE LIGHT IS ON. LIMITS AND TIME DELAY ARE SET BY REMOVING THE FRONT BEZEL (4 SCREWS). THIS CAN SAFELY BE DONE WITH THE POWER ON.

MODEL 25-469
BATTERY VOLTAGE/GROUND METER/ALARM RELAY
ARGA CONTROLS
A UNIT OF ELECTROSWITCH CORP. Monrovia, California 91016

SER NO. REV.

1	+	BATTERY INPUT
2	-	
3		GROUND
4		SHORT TO RESET
5		
6	NO	+GROUND FAULT
7	COM	
8	NC	
9	NO	-GROUND FAULT
10	COM	
11	NC	
12	NO	HI BAT. VOLTS
13	COM	
14	NC	
15	NO	LO BAT. VOLTS
16	COM	
17	NC	
18	+	OUTPUT (OPTION)
19	-	

RELAY CONTACTS

OPTIONS:

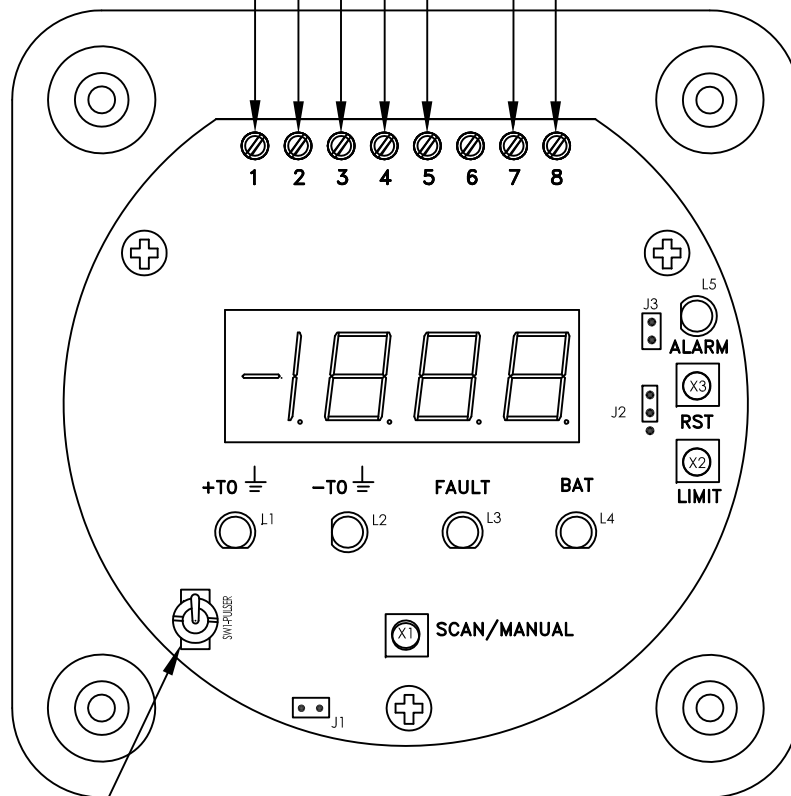
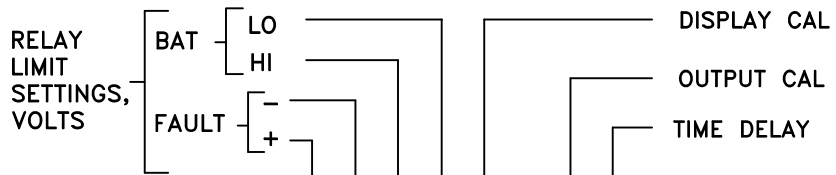
- 25-469-ID1:** HAS AN ISOLATED 0 TO 1mADC OUTPUT, INTO 0 TO 10K LOAD, FOR 90 TO 180 VDC INPUT. ACCURACY IS ±0.1% OF FS.
- 25-469-I420:** HAS AN ISOLATED 4 TO 20 mADC OUTPUT, INTO 0 TO 500Ω LOAD, FOR 90 TO 180 VDC INPUT. ACCURACY IS ±0.1% OF FS.
- 25-469-J3.0:** HAS RS-485 DIGITAL OUTPUT WITH DNP3.0 AND MODBUS PROTOCOLS. SCALING IS 0 TO 2000 COUNTS FOR 0 TO 180VDC. CHANNEL 0 IS BATTERY VOLTS, CHANNEL 1 IS GROUND FAULT VOLTS. CHANNEL 2 IS -BUS TO GROUND CHANNEL 3 IS +BUS TO GND. ACCURACY IS ±4 COUNTS.

ARGA CONTROLS
A UNIT OF ELECTROSWITCH CORP. Monrovia, California 91016.

BATTERY VOLTAGE/ GROUND METER/ ALARM RELAY
 125VDC

SIZE A	FSCM NO. 50290	DWG NO. 25-469	REV. D
DATE: 10 MAY 95		SHEET 1 OF 1	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
C	REVISED CALIBRATION PARAGRAPH	29 APR 09	HG
D	UPDATE FACE DWG (SHT 1&2)	04 DEC 09	HG



VIEW SHOWN WITH BEZEL REMOVED

BB OPTION ONLY

SPECIFICATIONS

- SCAN:** The four functions indicated by L1 to L4 are scanned in order automatically or manually by pushing the "SCAN/MANUAL" button.
 - A- **AUTOMATIC MODE:** (jumper on J3 covers upper two pins) Scanning stops when S/N button is pushed & resumes on next push.
 - B- **MANUAL MODE:** (jumper on J3 covers lower two pins) Moves to next display when S/N button is pushed.
- RESET:** For automatic reset, jumper covers the two pins of J2 or jumper terminals 4 & 5.
- ALARM LIGHT:** Lamp lights immediately when any fault occurs as a warning & to speed up adjustment.
- TO SET OR VIEW LIMITS:** Press "LIMIT" button, in MANUAL MODE, to sequence 1 to 4 per table below. View setting. Reset limit by turning 1 to 4 per table.
- CALIBRATION:** Use digital multimeter, across the line, to set the DISPLAY CAL in the "Battery Voltage" position. Time delay can be set with a stop watch.
 - ANALOG OUTPUT-** Measure the output (across 18+ & 19-) with a Digital Meter. Set the output current to 0mA (4mA) for 90V input & 1.00mA (20mA) for 180V input.
 - DIGITAL OUTPUT-** With 130.0V input, adjust 7 to give correct voltage display (1444 count). Note - 6 is omitted.
- DEFAULT SETTING:** When unspecified in purchase order, the value in drawing 15-025-469 sheet 2 will be furnished.

SEQUENCE	NORMAL OPERATION		PRESS 'LIMIT' TO SEE LIMIT & SET		
	FUNCTION	LAMP	FUNCTION	LAMP	TO SET TURN
1	+BUS TO GROUND VOLTS	L1	+ FAULT VOLTS	L3	1
2	-BUS TO GROUND VOLTS	L2	- FAULT VOLTS	L3	2
3	GROUND FAULT VOLTS	L3	HI BATTERY VOLTS	L4	3
4	BATTERY VOLTS	L4	LO BATTERY VOLTS	L4	4


DO NOT SCALE THIS DRAWING UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES		ARGA CONTROLS A UNIT OF ELECTROSWITCH CORP. Monrovia, California 91016		
.X	.XX .XXX ANGLES ±			
DRAWN H.G. DATE 25 JAN 95		SIZE A	FSCM NO. 50290	DWG NO. 15-025-469
APPROVED H.G. DATE 25 JAN 95		SCALE: FULL		SHEET 1 OF 2

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	ADDED VOLTAGES & PART NO'S	15 JUL 98	HG
B	COMPUTERIZED	4 AUG 03	HG
C	UPDATE DWG CHART	04 DEC 09	HG

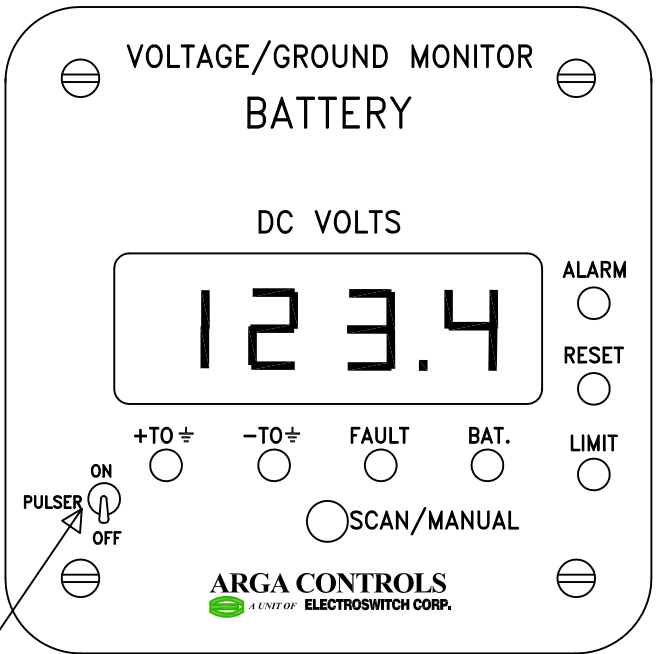
NOTE:

1. Unless purchase order gives set voltages, meters will be shipped with relay settings given below:
2. Ground Fault Voltage: Is the sum of the (+ TO $\frac{1}{2}$) and the (- to $\frac{1}{2}$) voltages. [i.e. if the (+ to $\frac{1}{2}$)=80V and the (- to $\frac{1}{2}$)=- 50V, the GFV=30V.]

PART NUMBER	BATTERY VOLTS	GOUND FAULT VOLTS	BATTERY HIGH VOLTS	BATTERY LOW VOLTS	TIME DELAY SECONDS
25-480	12	± 1.35	14.25	10.5	20
25-481, 25-470	24	± 2.7	28.5	21	20
25-482	32	± 3.6	38	28	20
25-471, 25-483	48	± 5.4	57	42	20
25-469, 25-469-OC, 25-484, 25-493, 25-494, 25-487, 25-496, 25-498	125	± 13	142	105	20
25-472, 25-485, 25-473	250	± 27	277	210	20
25-475	500	± 54	554	420	20

DO NOT SCALE THIS DRAWING UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES		ARGA CONTROLS  A UNIT OF ELECTROSWITCH CORP. Monrovia, California 91016	
.X .XX .XXX ANGLES ±		DEFAULT RELAY SETTING GROUND FAULT METER/RELAYS	
DRAWN H.G.	DATE 25 JAN 95	SIZE A	FSCM NO. 50290
APPROVED H.G.	DATE 25 JAN 95	DWG NO. 15-025-469	
SCALE: NONE		SHEET 2 OF 2	

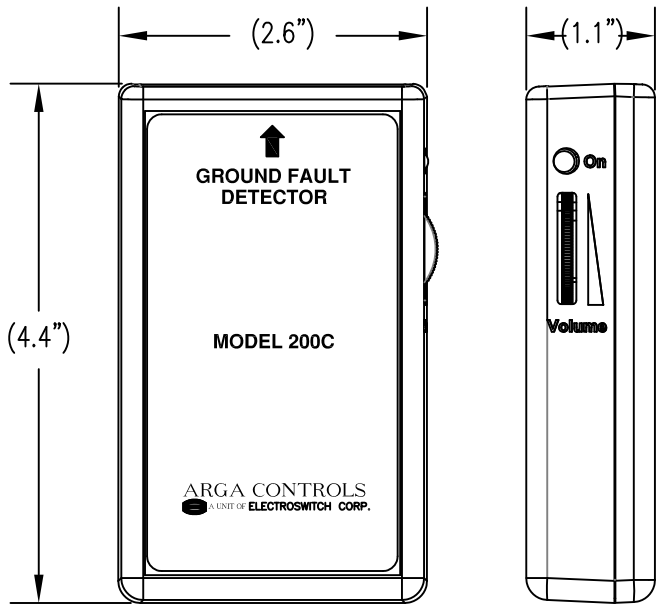
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	COMPUTERIZED	11 JULY 05	HG
B	UPDATE NEW ARGACONTROLS LOGO	27-JUN 12	VVN
C	REVISED IAW ECN NO. 56A	10/29/12	LBF/GPN
D	REVISED TO "A" SIZE FORMAT/ENC 057	01 NOV 12	VVN/D. J.



EXAMPLE OF PULSER SWITCH ON 25-469 BB

SPECIFICATIONS

- OPERATION:** Produces current pulses between the transmitter & the ground fault. A pulse receiver can trace the line with these pulses to the ground. Circuit breaker in this line can be identified & opened to clear the ground from the system.
- OPTION AVAILABILITY:** On Series Voltage/Ground Monitors. Specify suffix BB in addition to the other options.
- FEATURES:**
 - ON/OFF switch on front panel.
 - Automatic selection of grounded line.
 - Does not interfere with sensitive electronic equipment, radios, etc.
- RECEIVER:** ARGACONTROLS P/N 200B
 - Hand held
 - Does not contact circuitry
 - LED & sound indications
- SENSITIVITY:** Up to 100Ω ground resistance.
- SIGNAL:** Transformer coupled (no DC) 1μS, 10mA pulses into a solid ground. There are appx. 5 pulses/sec.



HAND HELD RECEIVER P/N 200C

ARGACONTROLS
 A UNIT OF ELECTROSWITCH CORP. Monrovia, California 91016

BB OPTION FOR
 SERIES 25 VOLTAGE/GROUND MONITOR

SIZE	FSCM NO.	DWG NO.	REV
A	50290	25-469 BB OPTION	D

DATE: 29 MAR 97 HG SHEET 1 OF 1