

PROGRAMMING CONSOLE CONFIGURATIONS AND SETTINGS

The programming controller allows the technician to:

1. Program the chopper card to ensure the correct behavior of the machine.
2. Test the electrical components and circuit relative to the traction drive system.
3. Read the alarms to easily identify the error codes.

The correct sequence to connect the programming controller is:

1. TURN OFF the machine by turning the main key switch.
2. Connect the controller to the chopper card using the connector on the controller.
3. Turn on the machine and operate the controller.
4. When finished, TURN OFF the machine by turning the main key switch.
5. Disconnect the controller from the machine.

WARNING: Connecting or disconnecting a controller in the wrong sequence may damage the card or the controller.



ALARM TABLE

Message	Alarm	What to do
ALARM A1 FW Switch ON	Forward micro-switch on in turning on.	Put the potentiometer in idle position and verify that the forward micro-switch is open.
ALARM A2 BW Switch ON	Backward micro-switch on in turning on.	Let the pedal stay in idle position and open the backward micro-switch.
ALARM A3 Pot. FAULT	Potentiometer error	Check the potentiometer harness.
ALARM A4 Ref OUT Neutral	Potentiometer not correctly positioned	Put the potentiometer in the idle position or if it already is in the right position, make the potentiometer programming.
ALARM A5 Over temperature	Thermal protection	Wait for 5 minutes and then verify the traction motor absorption rate.
ALARM A6 POWER STAGE	Damaged power stage	Replace the chopper card.
ALARM A7 OVERCURRENT	Overcurrent	Check the motor cables: If connections are regular and repeat the alarm, replace the chopper card.
ALARM A8 POWER FUSE/RELAY	Power fuse or internal contactor damaged	Check the fuse on the + battery and wiring, replace the chopper card if it persists (General relay damaged).
ALARM A9 UNDERVOLTAGE	Undervoltage	Check the batteries for poor voltage.
ALARM A10 OVERVOLTAGE	Overvoltage	Battery voltage greater than 45V: check battery status
ALARM A11 Overload Current	Current protection	Check the motor current and possibly trim the electronic current control
ALARM A12 DISABLE ON	Disabling active	Check the status of the disabled.
ALARM A13 KEY-OFF	Turn off sequence active	Check the wiring on the ignition power key.
ALARM A14 EEPROM FAIL	E ² prom data reading failed	Check the settings: if the alarm is repeated, replace the chopper card.

CHANGING PARAMETERS

Follow these instructions to change the parameter list:

1. Connect the programming controller to the machine as previously described.
2. Press the “MODE” button.
3. The first parameter description will appear. Pressing the “UP” or “DOWN” arrow will scroll through the parameter list.
4. Once on the parameter that needs to be changed, press the “MODE” button to enter into the parameter setting. While changing a parameter, the description will be blinking.
5. Change the value using the “UP” or “DOWN” arrows. Once the desired value is reached, press the “MODE” button to confirm the changes.

PARAMETERS:		
PARAMETER	DEFAULT	MMG
RESET TO DEFAULT	DISABLE	DISABLE
ACCELERATION RAMP	3	3
REVERSE RAMP	1,5	1,5
NEUTRAL RAMP	1	1
FORWARD SPEED	100	100
BACKWARD SPEED	60	60
MINIMUM SPEED	0	0
BATTERY VOLTAGE	24	24
SPEED REFERENCE	single-ended	single-ended
REF. DEADBAND	0,2	50mV
BRAKE DELAY	2	0,5
MULTIMODE SPEED	50	50
MULTIMODE CURRENT	25	45
BW SAFETY TIME	0	0
BW SAFETY SPEED	0	0
LOW BATTERY	19	19
TIMEOUT RUN AWAIT	0	60
RUN-AWAY	0	14
CURRENT LIMIT	45	90
RATED CURRENT	15	25
OVERLOAD TIME	60	60
5-J1 HW CONFIG	N.C. switch	N.O. switch
6-J1 HW CONFIG	N.O. switch	N.C. switch
11-J1 HW CONFIG	N.O. switch	N.O. switch
ENABLE ALARM 1	ENABLE	ENABLE
ENABLE ALARM 2	ENABLE	ENABLE
ENABLE ALARM 3	ENABLE	ENABLE
ENABLE ALARM 4	ENABLE	ENABLE
ENABLE ALARM 12	ENABLE	DISABLE
PASSWORD	0	0

POTENTIOMETER SETTINGS

1. Ensure the machine is TURNED OFF.
2. Connect the controller to the traction card.
3. Turn on the machine.
4. Enter into the parameter list by pressing the “MODE” button on the controller.
5. Scroll down the list using the “DOWN” arrow until the parameter titled “Speed Reference” appears.
6. Press the “MODE” button to enter into the parameter and change the setting as described below:

SPEED REFERENCE single-ended	Select the “single-ended” option and confirm with “MODE”
CALIBRATION Stop pos = 0.6 V	Put the pedal in the idle condition and confirm its value using the “MODE” button.
CALIBRATION Max pos = 2.7 V	Press completely the potentiometer and confirm the value using the “MODE” button.

7. Turn off the machine.
8. Disconnect the programming consoler.
9. Turn on the machine and perform a functional test to verify the adjustment.