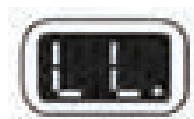


Fault Codes



Art_5533

The LED readout screen displays fault codes that provide information about the machine operating status and about malfunctions. The fault codes listed in the following charts describe malfunctions and can aid in troubleshooting the machine by pinpointing the area or component affected.

List of Fault Codes			
Code	Description	Lift Reaction	Failure Reason & Solution
01	System Initialization Fault	Disables All Motion	System initialization failure if fault last more than a couple seconds. The system will prohibit all actions. Solution: 1. Try to power on again.
02	System Communication Fault	Disables All Motion	The CAN bus communication between the upper/lower controller is faulty, and the system will prohibit all actions. 1. The lower or upper communication cable is damaged. 2. The upper control is faulty, replace the platform control box. 3. Measure battery voltage. 4. Check power relay. 5. Replace ECU.
03	Invalid Option Setting Fault	Disables All Motion	The current model code inside the ECU is not set to the correct model. Solution: 1. Try to reset the mode code of the corresponding model (for specific operation steps and model codes of each model).
04	Calibration Fault	Warning Only	1. If the angle sensor calibration fails, it may be that the angle sensor analog output changes too little or no change during the calibration process. Check whether the angle sensor is firmly fixed, whether the power supply and wiring are normal. Replace the angle sensor. 2. No-load/full-load calibration fails, it may be that the pressure sensor and angle sensor analog output changes too little or no change during the calibration process, or the machine is not level.
08	Key Switch Error	Disables All Motion	Platform/base control key switch failure or up & down control switching action is too fast. 1. Try to restart the power supply. 2. Replace Key switch.
09	GPS Communication Fault	Warning Only	The built-in GPS module or external GPS module communication failed (if equipped). Solution: 1. Check whether the connection between the CAN communication bus of the external GPS module and the CAN bus of the machine is normal.
10	MC Communication Fault	Warning Only	Check whether the wiring of the motor controller is normal, check the wiring from the controller to the drive motor.
11	BMS Communication Fault (Lithium battery equipped only)	Warning Only	Lithium battery BMS CAN bus communication failure, only alarm. Solution: 1. Check whether the CAN bus communication between the lithium battery and the machine is normal. 2. Replace the lithium battery.

Code	Description	Lift Reaction	Failure Reason & Solution
12	Chassis Up or Down Switch ON	Disable Chassis Control	ECU panel lift buttons failure, ground control operation is prohibited. Solution: 1. Check ECU lift switch.
18	Pothole Guard Fault	Disable Lifting and Driving	If it faults with platform elevated: 1. The left or right pothole is obstructed. 2. Pothole limit switches stuck or needs to be adjusted. If it faults when platform is stowed: 1. Check down limit switch (1930SE to 4555SE). 2. Check angle sensor (Micro13 and 19). Calibrate height.
31	Pressure Sensor 1 Fault	Disables All Motion	1. Check the pressure sensor power supply and its wiring. 2. Check whether the signal input of ECU pressure sensor 1 is normal. (Check ECU No. 45 pin) 3. Possible pressure sensor failure.
32	Angle Sensor Fault	Disables All Motion	1. Check the angle sensor power supply and its wiring. 2. Check whether the ECU angle sensor signal input is normal. (ECU 23 pin) 3. Possible angle sensor problem.
35	Pressure Sensor 2 Fault	Disables All Motion	1. Check the pressure sensor power supply and its wiring to ECU. 2. Check whether the signal input of ECU pressure sensor 2 is normal. (Check ECU 46 pin) 3. Possible pressure sensor failure.
36	Battery Discharged Alarm	Drive speed limit	It indicates that the current battery power is low. In order to prevent the battery from over-discharging, the system will prohibit the lifting function and limit the driving speed. Solution: 1. The battery needs to be charged in time.
37	Battery Drain Shutdown	Disables All Motion	The battery needs to be charged in time.
42	Platform Left Button ON	Warning Only	The operation handle enable, steer right or steer left button is triggered during power on. Solution: 1. Operate the machine 3s after the system is powered on. 2. Replace the joystick handle.
43	Platform Right Button ON	Warning Only	
46	Platform Enable Button ON	Disable Platform Control	
47	Joystick Not In Neutral	Drive speed limit	The joystick is not in the neutral position during power on. 1. Check or replace joystick.
52	Drive Forward Coil Fault	Disable Lifting and Driving	Check ECU Option settings Electric drive models do not have drive coils. 1. Set the correct option code for the machine (for specific operation steps and model codes of each model.
53	Drive Reverse Coil Fault	Disable Lifting and Driving	
54	Lift Up Coil Fault	Disable Lifting and Driving	The platform lifting solenoid valve has open circuit failure, and the lifting and driving functions are prohibited. Solution: 1. Check the solenoid valve coil and its wiring at the valve block.
55	Lift Down Coil Fault	Disable Lifting and Driving	Lift solenoid valve open circuit failure when the platform is lowered. Solution: 1. Check the lowering solenoid valve coil and its wiring at the lift cylinder valve block.
56	Steer Right Coil Fault	Disable Lifting and Driving	Right/left steer solenoid valve open circuit failure. Solution: 1. Check the right turn/left turn solenoid valve coil and its wiring at the valve block.
57	Steer Left Coil Fault	Disable Lifting and Driving	
59	Parallel Coil Fault	Disable Lifting and Driving	1. Check ECU options settings. Electric drive models are not equipped with parallel coils.

Code	Description	Lift Reaction	Failure Reason & Solution
68	Battery Low Voltage	Disables All Motion	It is reminded that the battery power is lower than the preset value, and the machine needs to be charged in time to protect the battery from over- discharge and damage.
80	Platform Load is over 80%	Warning Only	Prompt that the load of the current exceeds 80% / 90% / 99% of the rated load, only an alarm does not limit the action.
90	Platform Load is over 90%	Warning Only	
99	Platform Load is over 99%	Warning Only	
PCU: LL ECU: 100	Machine out of level	Disable Lifting and Driving	Indicates that the machine is in a tilted state in excess of maximum tilt angle value. Lifting and driving operations are prohibited. You need to descend to the lower limit and drive to a solid level surface to work at heights.
PCU: OL ECU: 101	Platform Overloaded	Prohibition of lifting and driving; The platform is forbidden to descend after exceeding the "overload descent height"	It prompts that the current platform load exceeds the rated load. In order to ensure the safe use of the equipment, the system will prohibit the lifting and driving functions at this time, and it is forbidden to descend above the overloaded descending height.
102	Restore Parameters to Default	Warning Only	/
103	Battery is draining	Warning Only	/
104	Motor Controller Fault	Warning Only	Press Yellow Down arrow for the 4-digit fault code. See Motor Controller fault codes listed later in this section.
105	BMS Alarm	Prohibit lifting, limit driving speed	The lithium battery management system has an alarm, and the control system will prohibit the lifting function and limit the driving speed at this time. Disregard if not Lithium
106	BMS Fault	Disable All Motion	Lithium battery management system fails, in order to ensure safety, the control system will prohibit all actions. Disregard if not lithium.
PCU: n1 ECU: 1xxx	Right Drive Motor Controller Fault	Controller Dependent	Motor controller processing.
PCU: n2 ECU: 2xxx	Left Drive Motor Controller Fault	Controller Dependent	Motor controller processing.
PCU: n3 ECU: 3xxx	Pump Motor Controller Fault	Controller Dependent	Motor controller processing.
PCU: UP	Platform up limit position	Warning Only	The system prompts that the platform has reached the upper limit and only gives an alarm.

Motor Controller Fault Codes

E700 receives the fault code sent by the motor controller and displays it, but it does not perform any protection actions or record it in the log. The fault codes of the motor controller are as follows: (1xxx represents the right drive motor controller, 2xxx represents the left drive motor controller, 3xxx represents the pump motor controller, 4xxx represents the steer motor controller).

Code	Fault name	Solution
X008	WATCHDOG	Replace the motor controller.
X017	LOGIC FAILURE #3	Replace the motor controller.
X018	LOGIC FAILURE #2	Replace the motor controller.
X019	LOGIC FAILURE #1	1. Check the battery voltage. 2. Replace the motor controller.
X028	PUMP VMN LOW	
X029	PUMP VMN HIGH	
X030	VMN LOW	1. Motor wiring problem. 2. Check for shorts inside motor. 3. Possible motor-controller problem.

Code	Fault name	Solution
X031	VMN HIGH	<ol style="list-style-type: none"> 1. Motor wiring problem. 2. Check for shorts inside motor. 3. Possible motor-controller problem.
X037	CONTACTOR CLOSED	<ol style="list-style-type: none"> 1. Contactor points stuck closed. 2. The large wire of contactor is short-circuited to the positive terminal. 3. Possible controller problem.
X038	CONTACTOR OPEN	<ol style="list-style-type: none"> 1. Contactor points broken or unable to close. 2. No power to signal wire to contactor or not connected. 3. Big fuse is broken. 4. Possible motor controller problem.
X052	PUMP I=0 EVER	
X053	STBY I HIGH	Motor controller internal current sensor hardware problem, replace the motor controller.
X060	CAPACITOR CHARGE	<ol style="list-style-type: none"> 1. Check for mis-wired motor controller large terminals. 2. Key Switch output shorted. 3. Possible motor controller failure.
X062 X065	TH. PROTECTION MOTOR TEMPERAT.	<ol style="list-style-type: none"> 1. Wait to cool down. 2. If motor controller is cool, replace the motor controller. Wait for the motor to cool down.
X066	BATTERY LOW	Charge the battery.
X074	DRIVER SHORTED	<ol style="list-style-type: none"> 1. The contactor coil is shorted. 2. The coil of the contactor has B+ before it should. 3. Possible motor controller failure.
X075	CONTACTOR DRIVER	<ol style="list-style-type: none"> 1. Contactor coil is broken. 2. Coil wiring error. 3. Possible motor controller problem.
X078	VACC NOT OK	
X079	INCORRECT START	
X080	FORW + BACK	Both directions powered, check the ECU.
X086	PEDAL WIRE KO	
X152	IIC BUS ERROR	Replace the motor controller.
X153	ENCODER ERROR XX	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.
X154	OUT MISMATCHXX	Replace motor controller.
X155	SP MISMATCHXX	Replace motor controller.
X157	INPUT MISMATCHXX	Replace motor controller.
X158	NOT RDY DRV.POW.	Replace motor controller.
X159	HVIL FAIL	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.
X160	SENS BAT TEMP KO	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.
X161	RPM HIGH	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.
X162	BUMPER STOP	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.
X163	ED SLIP MISMATCH	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.
X164	PWM ACQ. ERROR	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.

Code	Fault name	Solution
X168	SIN/COS D.ERR XX	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.
X169	ENCODER D.ERR XX	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.
X170	WRONG KEY VOLT.	<ol style="list-style-type: none"> 1. Detect whether there is a sudden change in voltage. 2. Check motor control wiring.
X171	ACQUIRING A.S.	<ol style="list-style-type: none"> 1. The encoder is broken. 2. Motor stuck more than a certain time. 3. Replace the motor controller.
X172	ACQUIRE ABORT	<ol style="list-style-type: none"> 1. The encoder is broken. 2. Motor stuck more than a certain time. 3. Replace the motor controller.
X173	ACQUIRE END	<ol style="list-style-type: none"> 1. The encoder is broken. 2. Motor stuck more than a certain time. 3. Replace the motor controller.
X174	OFFSET SPD.SENS.	Contact ZAPI engineer.
X175	SPEED FB. ERROR	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.
X176	HOME SENS.ERR XX	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.
X177	COIL SHOR. EB.	<ol style="list-style-type: none"> 1. Check if the brake wiring is short circuit. 2. Replace the motor controller.
X178	MOTOR TEMP. STOP	<ol style="list-style-type: none"> 1. Whether the motor temperature is actually too high. 2. Whether the motor temperature sensor wiring open circuit. 3. Replace the motor controller.
X179	STEER SENSOR KO	Check voltage and wiring of steering potentiometer.
X180	OVERLOAD	<ol style="list-style-type: none"> 1. Problem with motor/encoder wiring. 2. The motor has excessive resistance to rotation. 3. Possible motor controller problem.
X181	WRONG ENC SET	<ol style="list-style-type: none"> 1. The motor encoder is broken. 2. Motor unable to turn. 3. Possible motor controller problem.
X185	TILLER ERROR	
X186	WAIT MOT.P STILL	
X187	LIFT+LOWER	
X188	INT. CANBUSKO	Replace the motor controller.
X189	PUMP INC START	
X190	PUMP VMN NOT OK	
X191	PUMP VACC NOT OK	
X192	PUMP VACC RANGE	
X193	SMARTDRIVER KO	<ol style="list-style-type: none"> 1. Check the brake positive wiring. 2. Check A13 of drive-motor controller, check A3 of pump-motor controller. 3. Parameter in controller is abnormal. 4. Replace the motor controller.
X194	AUX BATT. SHORT.	<ol style="list-style-type: none"> 1. Parameter setting problem. 2. Check if the brake positive wiring and voltage are normal.
X195	POS. EB. SHORTED	<ol style="list-style-type: none"> 1. Check the brake positive wiring. 2. Check A13 of drive-control Check A13 of pump control. 3. Motor controller parameter setting problem. 4. Replace the motor controller.
X196	MOT.PHASE SH.	<ol style="list-style-type: none"> 1. Check whether motor wiring is normal, whether there is leakage to case or water in motor. 2. Possible motor controller problem.

Code	Fault name	Solution
X197	WRONG SLAVE VER.	Flash the correct software.
X198	M/S PAR CHK MISM	Replace Motor controller.
X199	PARAM TRANSFER	Wait a few seconds and power on again.
X200	VDC OFF SHORTED	<ol style="list-style-type: none"> 1. Check the battery. 2. Check motor controller connections.
X201 X202	TORQUE PROFILE	Replace motor controller.
	VDC LINK OVERV.	<ol style="list-style-type: none"> 1. Check for abnormal regenerative braking. 2. One of the external capacitors is damaged. 3. Replace motor controller.
X204	BRAKE RUN OUT	
X205	EPS RELAY OPEN	
X206	INIT VMN HIGH	<ol style="list-style-type: none"> 1. Motor wiring problem. 2. Check whether the motor voltage is leaking to case. 3. Possible motor-controller problem.
X207	INIT VMN LOW	<ol style="list-style-type: none"> 1. Motor wiring problem. 2. Check whether the motor is leaking. 3. Possible motor-controller problem.
X208	EEPROM KO	
X209	PARAM RESTORE	Restart the machine.
X210	WRONG RAM MEM.	<ol style="list-style-type: none"> 1. Power on key switch again. 2. After power on, the problem is still there, replace the motor controller.
X211	STALL ROTOR	<ol style="list-style-type: none"> 1. Excessive resistance to motor shaft rotation. 2. Motor mechanical problem.
X212	POWER MISMATCH	Replace Motor controller.
X213	POSITIVE LC OPEN	<ol style="list-style-type: none"> 1. Contactor coil positive wiring problem. 2. Possible motor controller problem.
X214	EVP COIL OPEN	<ol style="list-style-type: none"> 1. Check the wiring to valve coils. 2. Possible motor controller problem.
X215	EVP DRIV. SHORT.	<ol style="list-style-type: none"> 1. Check the wiring to valve coils. 2. Possible motor controller problem.
X216	EB. COIL OPEN	<ol style="list-style-type: none"> 1. Check for brake coil open circuit. 2. Check if the wiring is open circuit to brake coil. 3. Replace the motor controller.
X217	PEB NOT OK	<ol style="list-style-type: none"> 1. Check the brake positive wiring. 2. Check A13 of drive-motor controller, check A3 of pump-motor controller. 3. Parameter in controller is abnormal. 4. Replace the motor controller.
X218	SENS MOT TEMP KO	<ol style="list-style-type: none"> 1. The actual temperature is too high, let cool. 2. Motor temperature sensor problem or wiring problem.
X220	VKEY OFF SHORTED	<ol style="list-style-type: none"> 1. Check the battery. 2. Possible motor controller problem.
X221	HANDBRAKE	
X223	COIL SHOR.MC	<ol style="list-style-type: none"> 1. Contactor coil short circuit. 2. The contactor signal wire is short-circuited. 3. Possible motor controller problem.
X224	WAITING FOR NODE	Check another node.
X224	WAITING FOR NODE	
X224	WAITING FOR NODE	
X226	VACC OUT RANGE	
X227	HW FAULT	Replace the motor controller.
X228	TILLER OPEN	
X229	HW FAULT EB.	Replace the motor controller.
X230	LC COIL OPEN	<ol style="list-style-type: none"> 1. The coil wire is disconnected. 2. Possible motor controller Problem.

Code	Fault name	Solution
X231	PUMP I NO ZERO	
X232	CONT. DRV. EV	<ol style="list-style-type: none"> 1. Check the ECU options settings. 2. Possible motor controller problem.
X233	POWERMOS SHORTED	<ol style="list-style-type: none"> 1. Motor wiring problem. 2. Check for motor voltage leaking to case. 3. Possible motor-controller problem.
X234	DRV. SHOR. EV	<ol style="list-style-type: none"> 1. Check the ECU options. 2. Replace the motor controller.
X235	CTRAP THRESHOLD	Replace the motor controller.
X236	CURRENT GAIN	Replace the motor controller.
X237	ANALOG INPUT	Replace the motor controller.
X238	HW FAULT EV.	
X239	CONTROLLER MISM.	Check ECU version.
X240	EVP DRIVER OPEN	<ol style="list-style-type: none"> 1. Check the wiring to valve block. 2. Possible motor controller problem.
X241	COIL SHOR. EVAUX	<ol style="list-style-type: none"> 1. Check the wiring to valve block. 2. Replace the motor controller.
X242	OPEN COIL EV.	<ol style="list-style-type: none"> 1. Check the wiring to valve block. 2. Replace the motor controller.
X243	THROTTLE PROG.	
X244	WARNING SLAVE	Check the specific fault of the slave-controller.
X245	IQMISMATCHED	Replace motor controller.
X246	EB. DRV.OPEN	Replace motor controller.
X247	DATA ACQUISITION	Replace motor controller.
X248	NO CAN MSG.	<ol style="list-style-type: none"> 1. Interference problem, check CAN resistance setting, interference level. 2. For other software setting problems, you need to contact MEC Aerial Work Platforms.
X249	CHECK UP NEEDED	Change the "CHECK UP DONE" parameter to ON.
X250	THERMIC SENS. KO	Replace the motor controller.
X251	WRONG SET BAT.	<ol style="list-style-type: none"> 1. The parameter "battery type" is set incorrectly. 2. External voltage is too low or too high.
X253	FIELD ORIENT. KO	Replace motor controller.
X254	EB. DRV.SHRT.	<ol style="list-style-type: none"> 1. Check if the brake wiring is shorted. 2. The motor-controller is broken.

Electrical Schematic

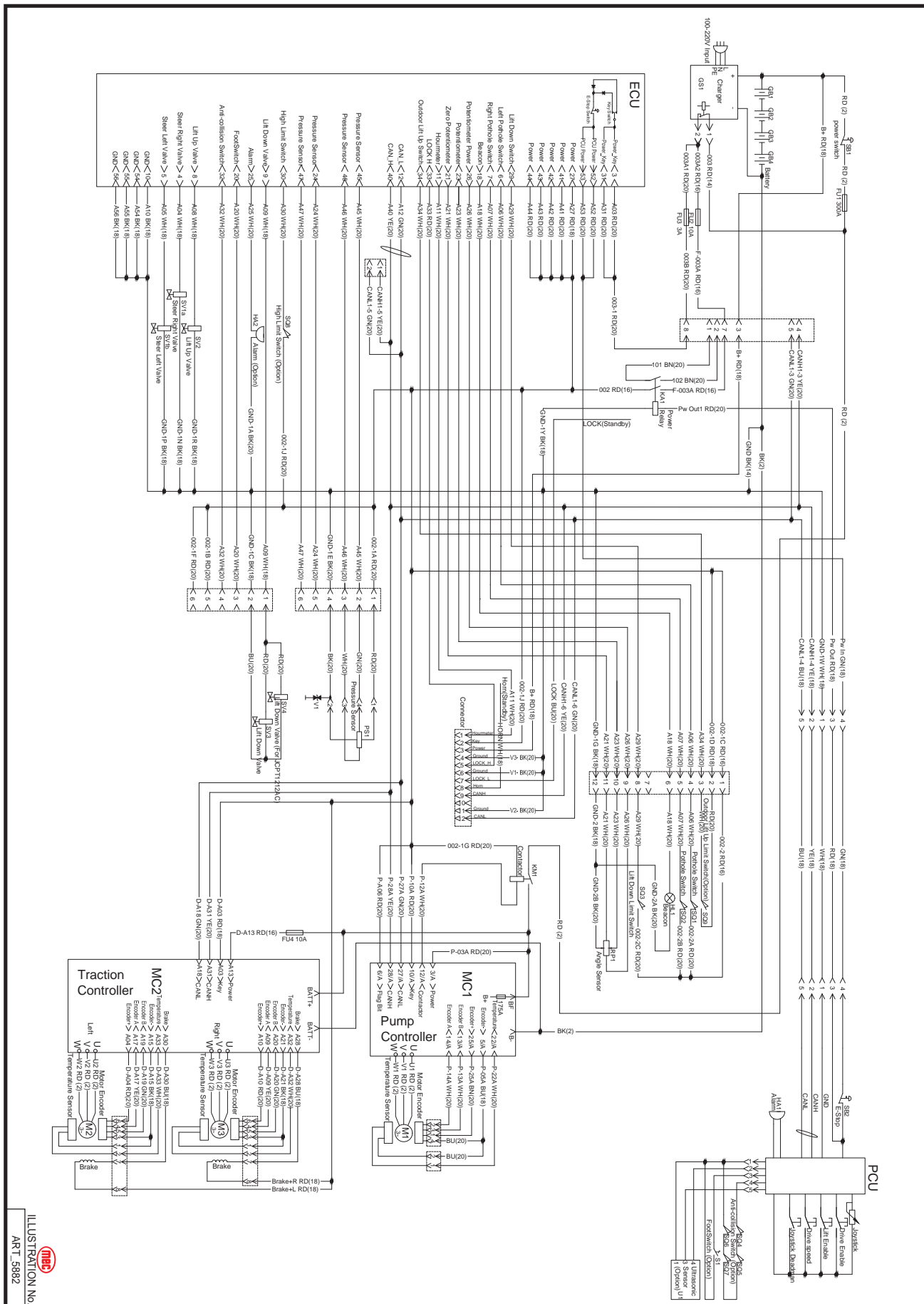


ILLUSTRATION No.

ART. 5882

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