# UMCB 01 Functional Description

June 19, 2004

## COMMAND/ACCESS CONTROL INPUTS

**Alternate (ALT):** When activated, a gate that is moving will stop; a gate that is stopped will start moving in the opposite direction of the previous direction of travel. This input is ignored during an alarm mode and will not operate the gate.

**Radio Open (RDO OPN):** When activated, a gate that is stopped will move open; a gate that is moving close will stop, pause and move open; a gate that is moving open will continue to move open. This input is ignored during an alarm mode and will not operate the gate.

**Commercial Radio (CRO):** When activated, a gate that is stopped will move open; a gate that is moving close will stop, pause and move open; a gate that is moving open will stop; a gate that is stopped at the open limit will move close; a gate that is stopped at the mid limit will move open. This input is ignored during an alarm mode and will not operate the gate.

**Free Exit (FRE):** When activated, a gate that is stopped will move open; a gate that is moving close will stop, pause and move open; a gate that is moving open will continue to move open. This input is ignored during an alarm mode and will not operate the gate.

**Open (OPN):** When activated, a gate that is stopped will move open; a gate that is moving close will stop, pause and move open; a gate that is moving open will continue to move open. This input is active in a constant pressure operation during an alarm mode.

**Close (CLO):** When activated, a gate that is stopped will move close; a gate that is moving open will continue to move open; a gate that is moving close will continue to move close. This input is active in a constant pressure operation during an alarm mode.

**Stop (STO):** When activated, a gate that is stopped will remain stopped; a gate that is moving will stop. As long as this input is active, the gate will not respond to any other command. This input is active during an alarm mode.

## SAFETY INPUTS

**Open Photo-beam (OPN PHO):** When activated, a gate that is moving open will stop; a gate that is moving close will continue to move close; a gate that is stopped will not move open until this inactive. A gate that was moving open prior to activation will resume moving open after this becomes inactive.

**Close Photo-beam (CLO PHO):** When activated, a gate that is moving close will stop, pause and reverse open for 2 seconds; a gate that is moving open will continue to move open; a gate that is stopped will not move close until this input is inactive. A gate that was moving close prior to activation will resume moving close after this becomes inactive.

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**Open Edge (OPN EDG):** When activated, a gate that is moving open will stop, pause and reverse close for 2 seconds; a gate that is moving close will continue to move close; a gate that is stopped will not move open until this input is inactive. The first activation of this input while the gate is moving open will disable the auto reclose function.

**Close Edge (CLO EDG):** When activated, a gate that is moving close will stop, pause and reverse open for 2 seconds; a gate that is moving open will continue to move open; a gate that is stopped will not move close until this input is inactive. A gate that was moving close prior to first activation of this input will resume moving close after this input becomes inactive. The second activation of this input while the gate is moving close will disable the auto reclose function.

## VEHICULAR CONTROL INPUTS

**Shadow Loop (SHW):** When activated, a gate that is stopped at the Open Limit will not move close until this input is inactive.

**Reversing Loop (REV):** When activated, a gate that is moving close will stop, pause and reverse open; a gate that is moving open will continue to move open; a gate that is stopped will not move close until this input is inactive.

## OPERATOR LIMIT INPUTS

**Open Limit (OLS):** When activated, a gate that is moving open will stop; a gate that is moving close will continue moving close.

**Close Limit (CLS):** When activated, a gate that is moving close will stop; a gate that is moving open will continue moving open.

**Mid Limit (MID):** When activated, a gate that is moving open will stop; a gate that is moving close will continue moving close. When open movement is initiated by the Open input, this input will be ignored. When open movement is initiated by commands other than the Open input, and starts from the Close Limit, this input will be ignored for the first 8 seconds of open movement. This input is ignored during an alarm mode and will not stop a gate that is moving open.

## OPERATOR OUTPUTS

**Master Open (MST OPN):** This is used for master/slave installations. This output is connected via a wire to the open input of the slave gate. This is used to command the slave gate to open.

**Master Close (MST CLO):** This is used for master/slave installations. This output is connected via a wire to the close input of the slave gate. This is used to command the slave gate to close.

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Note for Master/Slave Operation: 3 wires must be used to connect the master operator to the slave operator, COMMON, MASTER OPEN and MASTER CLOSE.

**Motor Open (MOP):** This is used to activate the device that controls the line voltage power to the open windings of a motor. The device may be a relay or a contactor with a 24V AC coil that draws less than 2 amps.

**Motor Close (MCL):** This is used to activate the device that controls the line voltage power to the close windings of a motor. The device may be a relay or a contactor with a 24V AC coil that draws less than 2 amps.

**Solenoid (SOL):** This is used to activate the device that controls the line voltage power an operator brake or gate-locking device. The device may be a relay or a contactor with a 24V AC coil that draws less than 2 amps. This output is activated before a motor output is activated to allow time for the mechanical brake or lock to disengage before the gate starts to move.

## OPTIONS AND FUNCTIONS

**Option Selection Switch 1, Safe-Secure Operation Mode (patented):** When OFF, the Open and Close inputs function normally. When ON, the Open and Close inputs are disabled for normal operation and are activated during alarm mode operation. This allows the installation of and open and close pushbutton in a location that would be accessible to safely operate the gate in an emergency, but would not open or close the gate during normal operation and compromise security.

**Option Selection Switch 2, Right-hand/Left-hand Installation:** When OFF, the operator is set for right-hand installation. When ON, the operator is set for left-hand installation. The motor open and close outputs and the open and close limits are reversed by the control logic so rewiring is not necessary.

**Option Selection Switch 3, Normally Open/Close Stop:** When OFF, the operator functions normally. When ON, the stop input must be closed for normal operation.

**Option Selection Switch 4, Pre-move Delay and Alarm:** When OFF, the operator functions normally. When ON, there will be a 3 second pre-move delay before the gate starts movement in any direction (except after an obstruction reversal). In addition, the on-board alarm will sound during the pre-move time and when the gate is in motion.

**Option Selection Switch 5, Slave Operation:** When OFF, the operator functions normally. When ON, the operator functions as a slave, the Auto Reclose function is disabled and all other inputs function normally (i.e. safety inputs).

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**Auto Reclose Adjustment POT:** When turned fully counter clockwise, the Auto Reclose function is disabled. When turned to approximately the 8 o'clock position, the timer is set to approximately 2 seconds. When turned fully clock wise, the timer is set to approximately 69 seconds.

**Open Force Adjustment POT:** When turned fully counter clockwise, the open obstruction detection is at its most sensitive setting. This must be field adjusted for each installation.

**Close Force Adjustment POT:** When turned fully counter clockwise, the close obstruction detection is at its most sensitive setting. This must be field adjusted for each installation.

## BUILT-IN FUNCTIONS

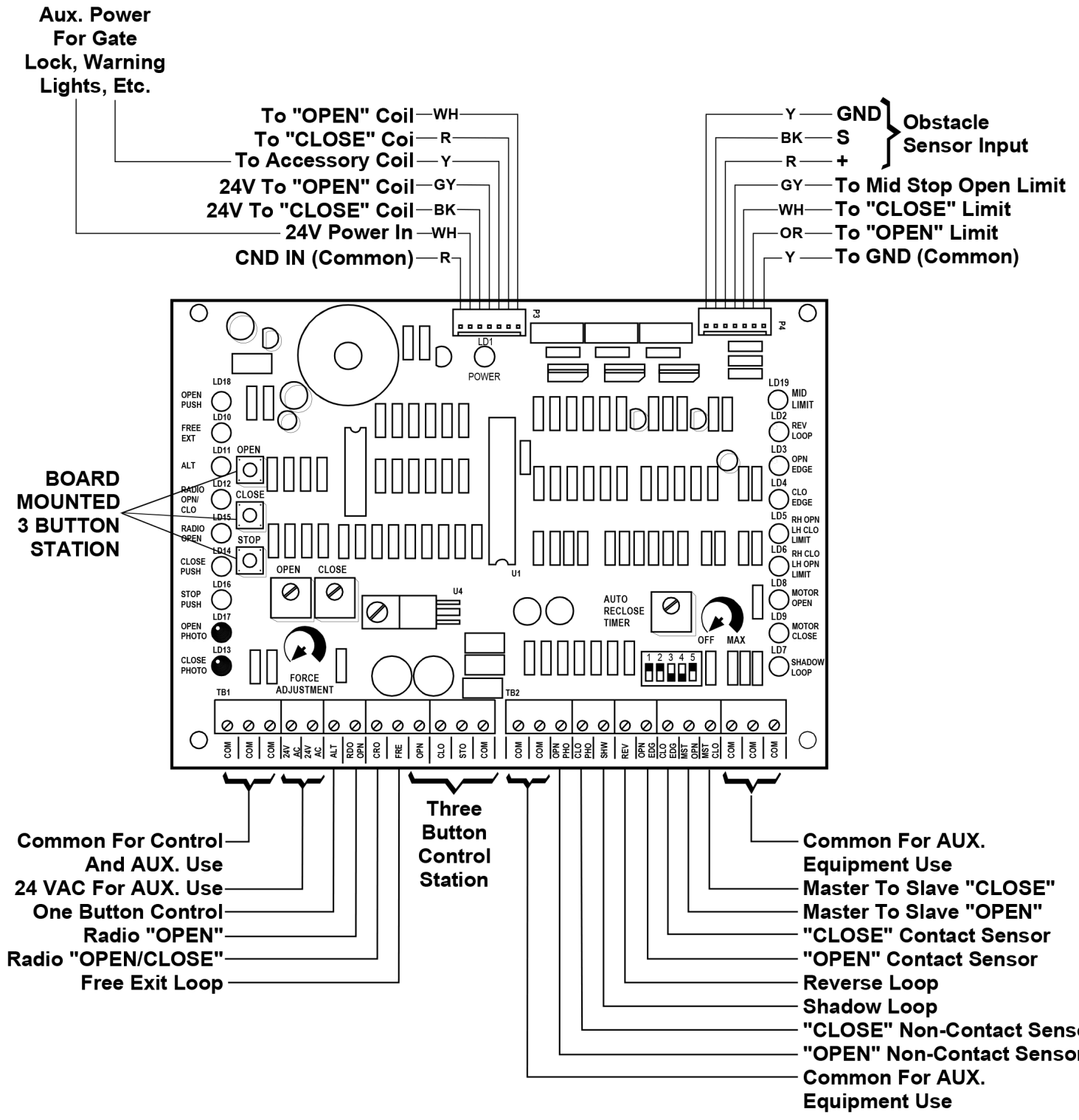
**Maximum Run Timer (MRT):** At power on, this value is set to 60 seconds. After power on, this function determines the actual run time of the gate from the close limit to the open limit as the gate is operated. The gate must run approximately 5 complete close to open cycles before the time is properly determined. Afterwards, if the gate operates longer than the MRT time without an input from a limit switch or other input, the control logic will turn off the motor. This calculated value is reset to the power on value whenever power is turned off.

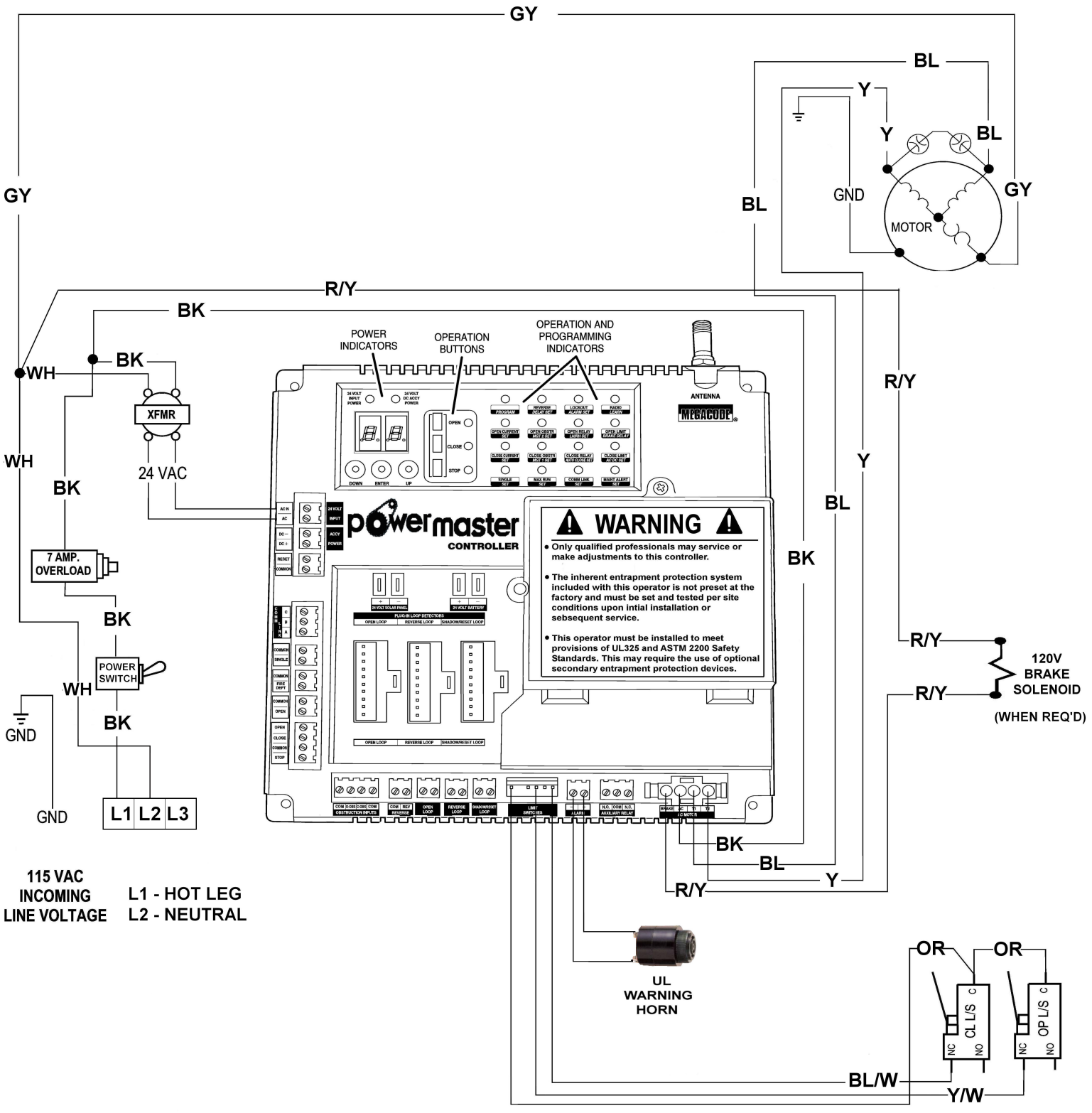
**Alarm Mode Operation:** When two obstructions are detected by the built-in obstruction detection the control logic, before reaching an open or close limit switch, the operator will function in the alarm mode. Certain inputs are disabled (see above) along with the auto reclose timer and the on-board alarm will sound. In alarm mode, the gate can only be activated by constant activation of either the open input or the close input. In other words, gate motion will immediately stop if the open (or the close) input is released. Normal operation will resume once the gate reaches either the open or close limit,

**Power On Functions:** After power on the operator will function (for one cycle) as if option switch 4 is on (pre-move/alarm). If the auto reclose timer is active and the gate is open, the gate will start close after the reclose time. If the free exit input is active (from a 7-day timer, for example), the gate will start open.

**Motor Braking (plug-stop):** On some models, when the gate stops both the motor open and motor close outputs are momentarily activated. This energizes both windings of the motor and provides a braking action that helps to stop gate movement and minimize coasting of the gate.

# WIRING TO 2004 UMCB-01 CONTROL BOARD






| powermaster | |
|---|---|
| DATE: | SG-51, CSW-I-51 |
| BY: RPL JR. | RPL SR |
| FOR USE WITH POWERMASTER COMMERCIAL SWING OR SLIDE GATE OPERATOR WITH POWERMASTER CONTROLLER. | |
| WD# 7001 REV. 1 | |

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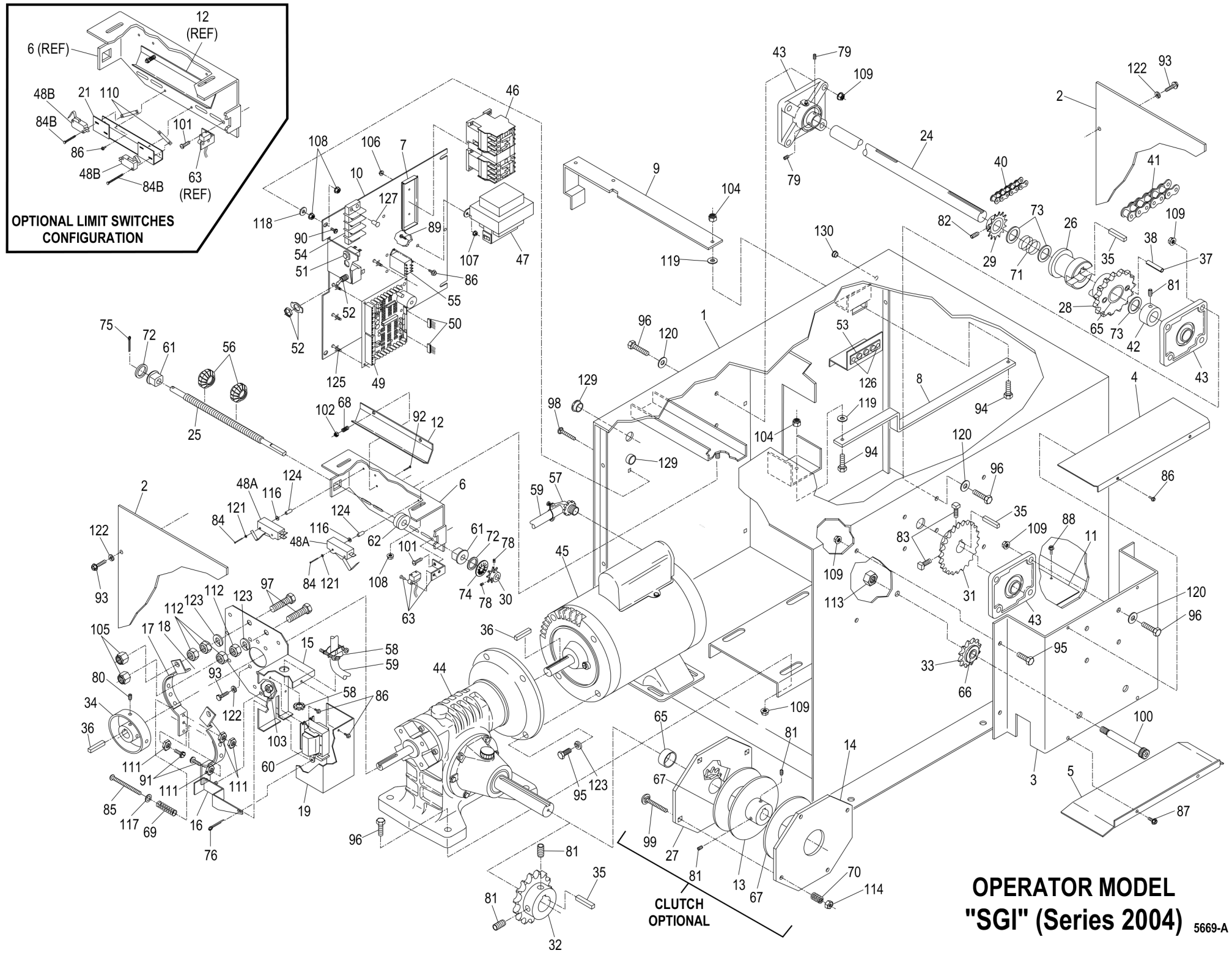
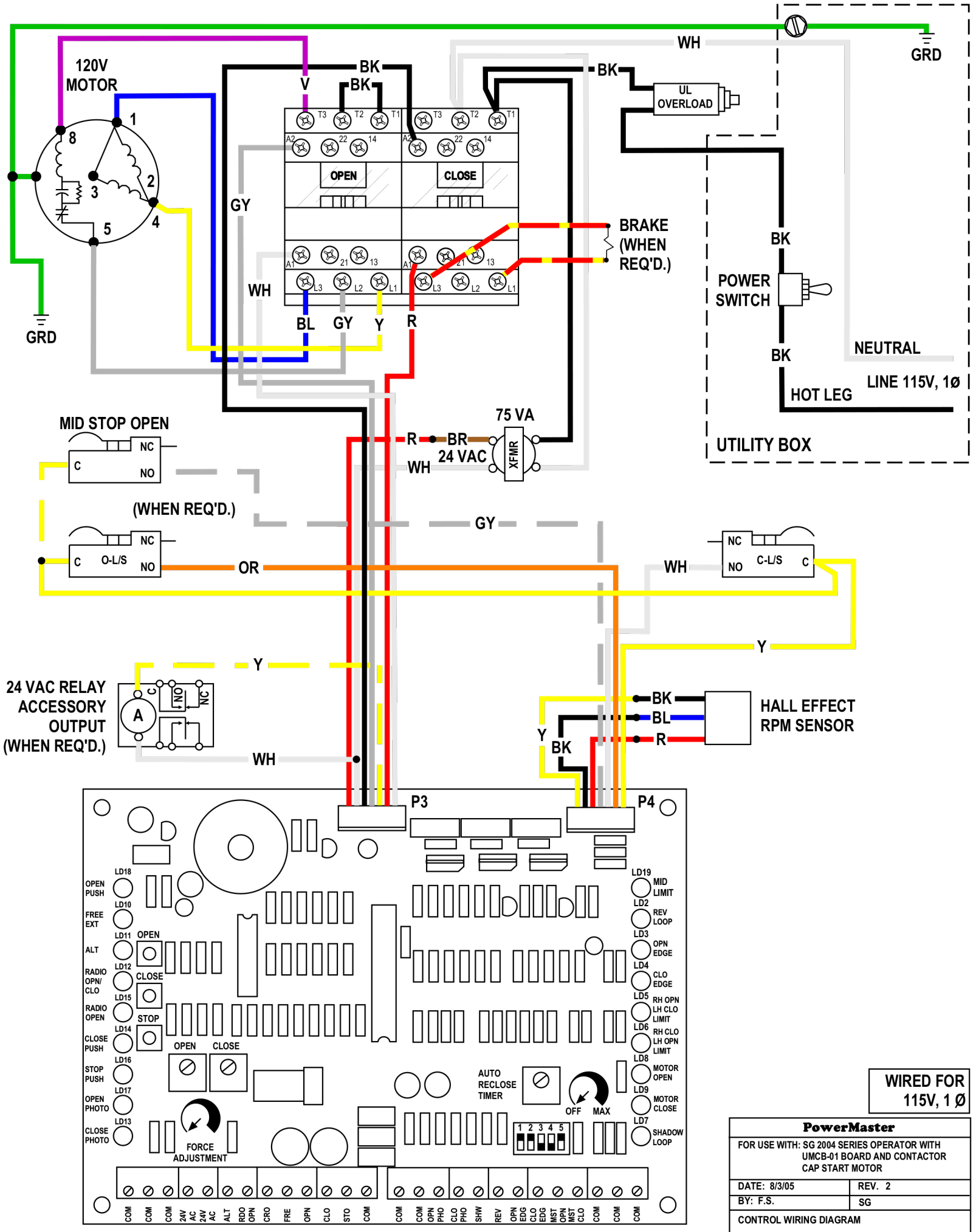



# OPERATOR MODEL "SGI" (Series 2004) 5669-A




WIRED FOR
115V, 1 Ø

| PowerMaster | |
|---|---|
| FOR USE WITH: SG 2004 SERIES OPERATOR WITH UMCB-01 BOARD AND CONTACTOR CAP START MOTOR | |
| DATE: 8/3/05 | REV. 2 |
| BY: F.S. | SG |
| CONTROL WIRING DIAGRAM | |
| WIRING DIAGRAM 6101 | |

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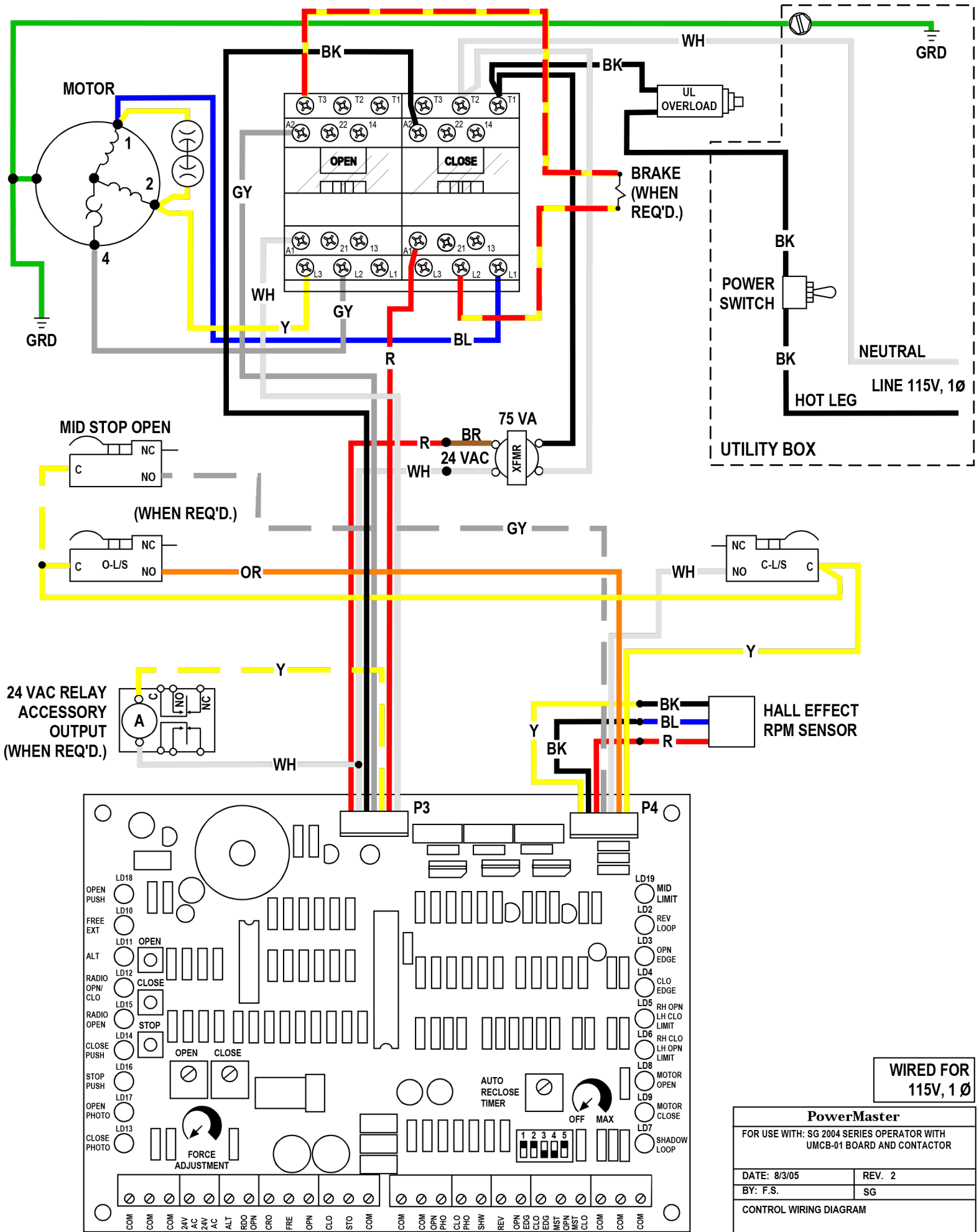


**WIRED FOR 115V, 1 Ø**

| PowerMaster | |
|---|---|
| FOR USE WITH: SG 2004 SERIES OPERATOR WITH UMCB-01 BOARD AND CONTACTOR | |
| DATE: 8/3/05 | REV. 2 |
| BY: F.S. | SG |
| CONTROL WIRING DIAGRAM | |
| WIRING DIAGRAM 6100 | |

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