

ES3R-SD205 Inspection Form

This form must be completed if an ES3R, or SD-series 2 HP, 3 HP, or 5 HP is being returned to Phase Technologies for warranty consideration.

***** This form must be submitted with your RMA request to receive an RMA to return products. A copy of this form and your RMA will need to be enclosed with any products being returned for evaluation. *****

Basic Information

Distributor: _____		Location: _____	
Model Number	<input type="checkbox"/> ES3R	<input type="checkbox"/> SD002R	<input type="checkbox"/> SD003R
	<input type="checkbox"/> SD202R	<input type="checkbox"/> SD203R	<input type="checkbox"/> SD205R
Serial Number: _____			
Installation Date: _____		Failure Date: _____	
Evaluation Date: _____			
Contractor/Company: _____			
Basic Failure Description: _____			

Installation Assessment

1. Is branch circuit protection provided to the drive by an *appropriately sized* fuse or circuit breaker? Fuse/Breaker size: _____ A Yes No
2. Are the input wires sized between 6 AWG and 20 AWG and rated to at least 75°C and 600V? Input wire size: _____ AWG Yes No
3. Are the output wires sized between 6 AWG and 20 AWG and rated to at least 75°C and 600V? Output wire size: _____ AWG Yes No
4. Has the incoming power been verified (L1 to L2, L1 to ground, and L2 to ground) to be between 200V and 260V? Yes No
 L1-L2: _____ V L1-ground: _____ V L2-ground: _____ V

If the answer to any of the above questions was NO, correct the installation and reassess. Warranty will be denied if the installation does not comply with Phase Technologies' requirements.

Physical Evaluation

1. Is the enclosure dented or otherwise damaged? Yes No
2. Are the circuit boards discolored, burned, or otherwise damaged? Yes No
3. Is any of the wiring loose or discolored? Yes No
4. Are the internal components clean? (dirt, lizards, spiders) Yes No

If the answer to any of the above questions was YES, take pictures of the observed damage and send to Phase Technologies for consideration before returning the product. If the damage appears to be from abuse of the product or due to external conditions (i.e. a power surge), warranty will be denied. If there is obvious circuit board or wiring damage, do NOT proceed with the functional evaluation.

Functional Evaluation

*Wire the uninstalled drive to 120V single phase power via the L1 & L2 terminals.
(SD202-SD205 units, flip dip switch 1 on the control board to the "ON" position to allow the drive to utilize 120V power.)*

1. **Does the drive power on?** – (If not check all connectors and black programming switch, SD202-205 to ensure it is in the up position, bottom right of the inverter board) (Factory reset for ES3R. Choose voltage. Recycle power.) Yes No
2. Is the display functioning correctly (backlight on, text displayed clearly and not jumbled)? Yes No
3. Access the READ MEASURED VALUES menu. Does the *BUS CAP VOLTAGE* read between 160V to 180V (assuming drive is connected to 120V power)? Yes No

Functional Evaluation *(Continued)*

If the answers to 1-3 are YES, access the fault log. Press the HOME button and then press the UP arrow until FAULT LOG appears. Press ENTER to access the list of faults. For questions 4-11, check NA if the indicated fault(s) have not been recorded OR if the indicated fault(s) have been resolved (old history).

4. OUTPUT FAULT or OUTPUT OVERLOAD

Is there a short circuit or fault on the output lines / load / motor circuit? Or, is there a relay installed in the motor circuit? NA Yes No

5. LOW INPUT VOLTAGE or HIGH INPUT VOLTAGE

See Question 4 under Installment Assessment. Is the incoming power below 200V or above 260V? NA Yes No

6. OVER TEMPERATURE

Are there obstructions around the ventilation openings or fans, or has the ambient temperature for the drive exceeded 50°C (122°F)? NA Yes No

7. SENSOR FAULT, SENSOR CONNECTION FAIL, or ANALOG 20mA FAULT

Power off the drive. Uninstall the pressure transducer (if not already done). Install a 10 kΩ resistor between control terminals I1+ and I1-. Power the drive back on and access the READ MEASURED VALUES menu. Does I_{4-20mA IN} value read between 13 mA to 17 mA? NA Yes No

8. MOTOR OVERLOAD

Is the OVERCURRENT LIMIT set unrealistically low versus the motor nameplate limit? OVERCURRENT LIMIT: _____A NA Yes No
[Defaults] 12 amps ES3R / 9 amps SD002 / 11 amps SD003
9 amps SD202 / 11 amps SD203 / 18 amps SD205

9. CURRENT UNBALANCE

Is the CURRENT UNBALANCE set to an excessively low value? NA Yes No
CURRENT UNBALANCE: _____%

10. DRY WELL KW or DRY WELL CURRENT

Are the dry well parameters set to excessively high values? NA Yes No
DRY WELL KW: _____KW [Default: 0 KW]
DRY WELL CURRENT: _____A [Default: 0 amps]

11. AUX1 Latch Fault or AUX2 Latch Fault

Are the SYSTEM CONFIG, AUX1 SELECT, and AUX2 SELECT set incorrectly? NA Yes No

See Table 5-4 in Product Manual.

SYSTEM CONFIG: _____ [Default: 1 or 0]

AUX 1 SELECT: _____ AUX 2 SELECT: _____ [Default: 1]

Functional Evaluation *(Continued)*

If any of the answers to 4-11 are YES, adjust the appropriate setting (if possible) and/or correct the potential causes for the fault. Reassess the drive functionality.

12. If the issue is related to constant pressure control, review Section 7.2 NA Yes No
Troubleshooting Constant Pressure Systems in the Product Manual. Are any
of the various Operating Parameters set inappropriately?

MODE: AUTO MAN OFF [Default: AUTO]

MIN FREQUENCY: _____ Hz [Default: 30 Hz]

MAX FREQUENCY: _____ Hz [Default: 60 Hz]

SUBMERSIBLE PUMP: YES NO [Default: YES]

PROPORTIONAL GAIN: _____ [Default: 5]

INTEGRAL GAIN: _____ [Default: 12]

Evaluation Performed By: _____ Date: _____

*Return the drive to the customer with the inspection findings if the failure is not due to defects in material or workmanship. **Be sure to flip dip switch 1 back to the "OFF" position.***

*If the answer to any of the above questions was NO or if the drive is still not functional after addressing any potential problems identified during this inspection, return to Phase Technologies is approved. Please complete the RMA Request Form to receive authorization to return this drive.
https://www.phasetechnologies.com/downloads/RMAForm_09242019_v5_FILLABLE.pdf*

To request an RMA, send completed inspection form and RMA to: RMA@phasetechnologies.com

*If further assistance is required, please call Phase Technologies at **866.250.7934** or email service@phasetechnologies.com*