

Service Report

Date – 27.04.2015

Company - Noble Rig NRL-337

Subject - MASTERDRIVE INVERTER OUTPUT CURRENT UNSTABLE
RESULTING MOTOR VIBRATION

Equipment - Drawwork Drilling Machine
4 motor connected to common shaft

Mode of Operation - P100 = 4 = nRegulat

Reference - Single line diagram on page 2

MASTERDRIVE - 6SE7041-2WL60

Systems start operation between 2005 and 2006.

Dear Sir,

With reference to the above mention subject, please find our comments as follows:

Run test with motor uncoupled.

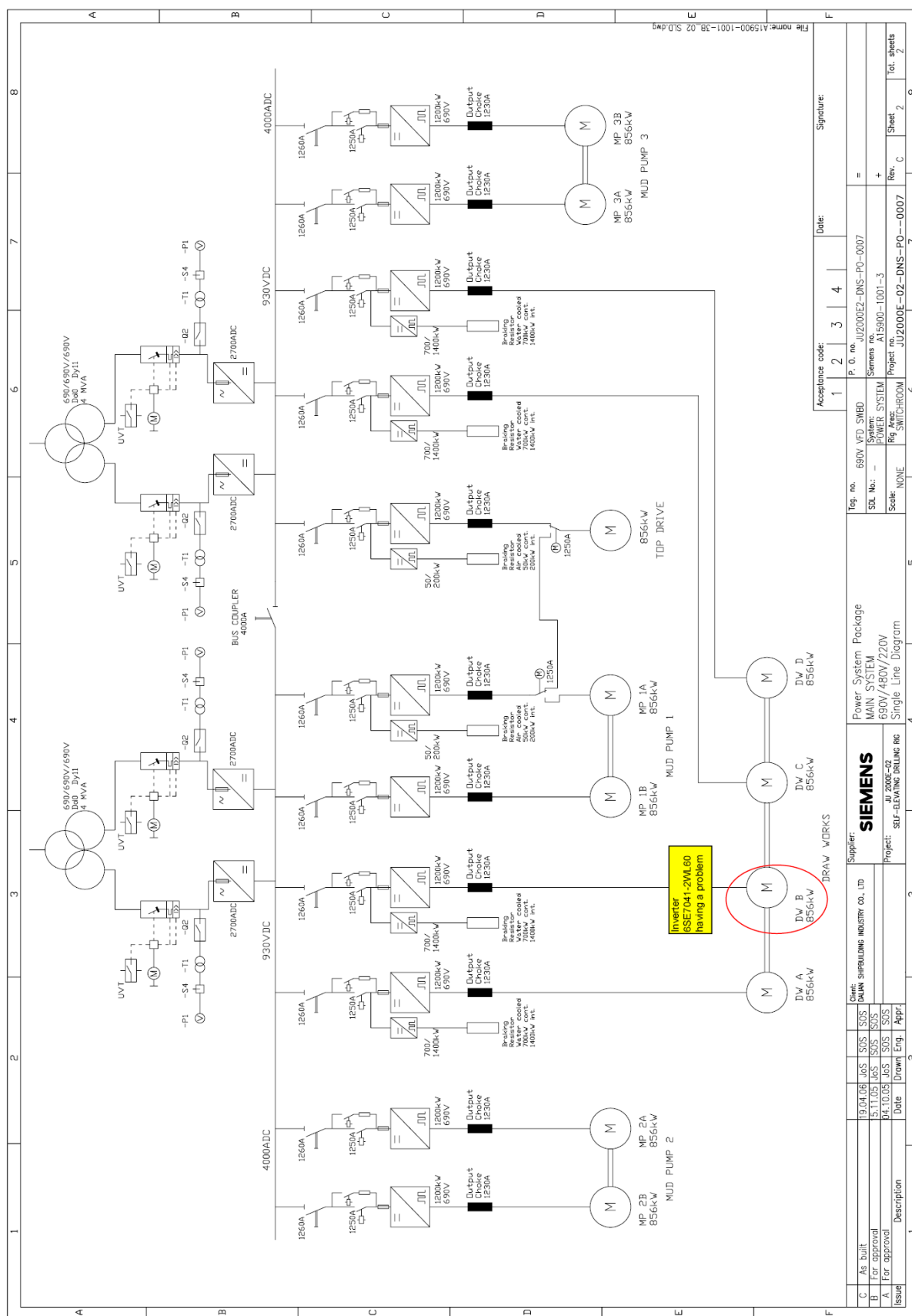
1. Try to operate on P100 = 0 = V/Hz + nReg = Operating from 0 to 50% speed, speed stable no current fluctuation.
2. Try to operate on P100 = 1 = V/Hz = Operating from 0 to 50% speed, speed stable no current fluctuation.
3. Try to operate on P100 = 3 = fRegulat = Run on 35 rpm with oscillating humming sound. (can be heard near the inverter panel). Current unstable.

Note:

All the above test run (setpoint 10%) encoder was monitored P032 = 91(MeasdRot.Speed). r33 = (display conn) 10% working ok.

4. Try to operate on P100 = 4 = nRegulat. Run on 10% speed setpoint, motor not running. Encoder was monitored = r033 = KK91(MeasndRot.Speed) = 0% no speed value indicated.
Run P115 = 7 (Tach Test) = Trip on F015 = Motor Stall.

At ready to operate status, monitored output CT r832.001 = Phase flow L1 and r832.002 = Phase flow L3. Notice unstable value range on L3, from 0.0 to -1.2 up to - 4.4. Please see page 3 for your reference.



P072	Rtd Drive Amps				1230.0	A
P073	Rtd Drive Power				1200.0	kW
r832	Phase Flow	001	L1		0.0	A
		002	L3		-2.6	

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P072	Rtd Drive Amps				1230.0	A
P073	Rtd Drive Power				1200.0	kW
r832	Phase Flow	001	L1		0.0	A
		002	L3		-3.3	

Series of snap shot in less than one minute taken when motor at stand still.

Run motor ID P115 = 2, 5, and 7. We could not able to complete P115 without a fault.

We need your urgent technical support to resolve the problem as we need to return to normal operation of the off shore oil rig NRL-337.

Your quick response on our request is highly appreciated.

Thank you very much

With best regards,

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DW-B Inverter order no. = 6SE7041-2WL60
Inverter output 3 pcs. CT Hall-effect current sensor,
Siemens order no. MLFB = 6SY7000-0AC07
ABB Data = ES2000-9725, 2000A, Np/Ns: 1/5000, RS: 25 ohm

Important Note:

Due to special application of the drive, it is always on operation status, with setpoint not release. The excitation current at stand still is generated and being set by parameter P103, let say set 33%. So that 33% current is being monitored by the inverter output CT. Say with a defective output CT (say actual value problem) the CUVIC control will try to read/correct the actual current, creating unstable excitation current at stand still. This unstable excitation current creates unstable mechanical movement on the rotor.

Technical Support Answer:

04/27/2015 12:09:18 Email - Outbound SR= 1-3983993362 MASTERDRIVE MOTOR VIBRATE

Dear Mr Torreda, the error characteristic shows that a current transformer is not working correct. Please change all three Current transformers. If you have further questions don't hesitate to contact me again. Best regards Your Technical Support for Automation & Drives Roland Uebelein SIEMENS AG Digital Factory Tel: +49 (0)911 895 7 222 Fax: +49 (0)911 895 7 223 New Support Request: <http://www.siemens.com/automation/support-request> Internet: <http://www.siemens.com/automation/service&support> FAQ http://www.siemens.com/automation/csi_en/product Siemens Aktiengesellschaft: Chairman of the Supervisory Board: Gerhard Cromme; Managing Board: Joe Kaeser, Chairman, President and Chief Executive Officer; Roland Busch, Lisa Davis, Klaus Helmrich, Janina Kugel, Siegfried Russwurm, Ralf P. Thomas; Registered offices: Berlin and Munich, Germany; Commercial registries: Berlin Charlottenburg,