

MV VFD Preventive Maintenance

Page 1 of 10

Basic PM Report

Task Number	21623
Field Engineer	Hoque, Nick



Insert Picture of VFD

Site Name

Columbia university

MV VFD Preventive Maintenance

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T-300 Series VFD System

VFD DATA

Project Number	143595
Serial Number	091001498
Typeform	M3A44050SAW
Application	Chiller
Description	

MOTOR DATA

Manufacturer	US Motor		
Model			
Serial Number			
Rotation (DE, ODE)			
Voltage	4160	Current	50.00
RPM	1783	Pole	4
Hz	60	HP	60

TRANSFORMER DATA

Manufacturer	Hammond Power		
MFG. P/N			
Serial Number			
KVA		Tertiary KVA	
	Primary	Secondary	Tertiary
Voltage	4160	635	480
Current			

MV VFD Preventive Maintenance

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Place a check mark next to each step once completed.

I. Save Setfile & Tracesave File

A) Save current setfile

- ☒ 1. Compare with setfile from commissioning, previous PM or from default. If there are any changed parameters, make a record, and investigate potential/possible reasons for the parameter change.

B) Save Tracesave

- ☒ 1. Review “Trace back data” and explain any new faults since last PM visit.
- ☐ 2. Download data from any peripheral devices i.e. Multilin 869, etc.

II. Visual Inspection & Cleaning

All wire/cable/bus condition(s) and connection(s) should be checked, secured, re-torqued, and marked as necessary. Verify all foreign material (dust, metal, bolts etc.) is removed from the cubicle(s). Vacuum the cabinet as required, and clean the air filters.

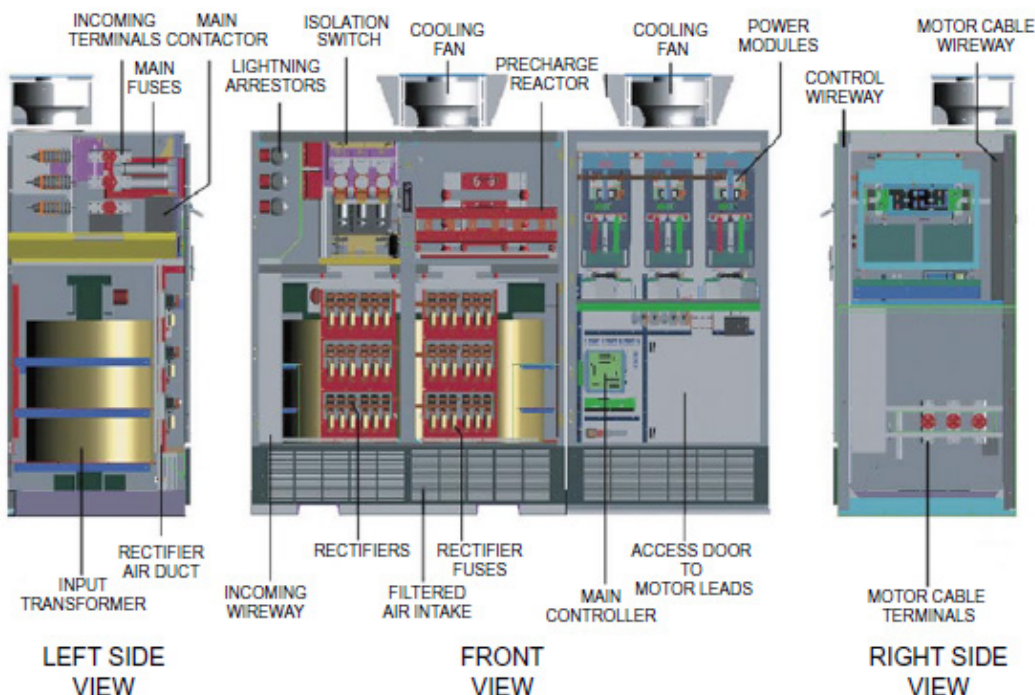


Figure 1: Typical Frame 1 4160V T300MVi (1000 to 2000HP)

MV VFD Preventive Maintenance

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A) Input Section



1. Input Terminals

- Input terminals have been checked and are tight.



2. Cables

- There is appropriate spacing between the cable(s).



3. Switch Gear (JK)

- Switchgear has been checked for tracking and damage.



4. Pre-Charge Reactor

- Reactor has been visually inspected.

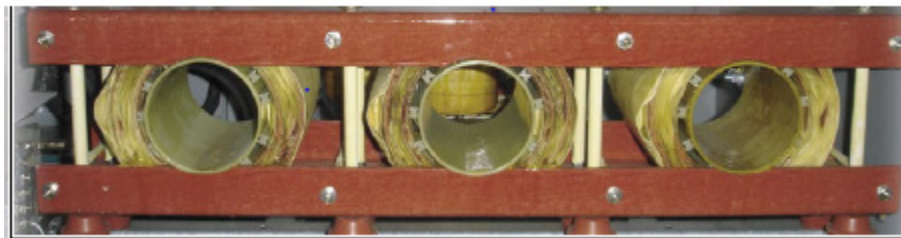


Figure 2: Typical Frame 1 Pre-Charge Reactor



5. Input PT and CT

- PTs and CTs have passed visual inspection.



Figure 3: Typical Control Power Transformer

MV VFD Preventive Maintenance

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☒ 6. Isolation Switch

- Isolation switch is functioning properly.



Figure 4: 4160V Isolation Switch

B) Transformer Section

☒ 1. Transformer

- Transformer passes visual inspection and is free of moisture and/or foreign objects.

Transformer	R-S-T (Ω)	U(Ω)	V(Ω)	W(Ω)
1	98.8 G	326 G	342 G	2:81 G
2		286 G	308 G	119 G

☒ 2. Airflow Guides

- The baffles and airflow guides are within proper tolerances of the transformer.



Figure 5: Typical Frame 4 (4000-6000HP) Input Transformer

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☒ 3. Cooling FAN

- The fan(s) turn freely.

C) Rectifier Section

☒ 1. Discharge Resistor

- The discharge resistor passes static checks and visual inspection.

☒ 2. Rectifier Fuses

- Fuses are closed and in good condition.

☒ 3. Airflow Guides

- There is no obstruction in or around the airflow guides and heatsink.

D) Inverter Section

☒ 1. Power Module

- Modules pass all checks and heatsink is free of debris and obstruction.
- Door Switches function as intended.

Power Module	Serial Number 1	Serial Number 2
U	09100180	
V	091001799	
W	091001800	

☒ 2. GDI Board

- PCB passes inspection.
- Ground Fault Resistor (11R11) reads correct value.

☒ 3. Cooling FAN

- The fans turn freely

E) Control and Output Section

☒ 1. Output Reactor and Filter Circuit

- Reactor and filter circuit pass inspection.

☒ 2. Output Terminals

- Terminals have been checked and are tight.

MV VFD Preventive Maintenance

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☒ **3. HCT Cable**

- HCT and cables are secure and in good condition.

☒ **4. Output PT and CT (If there is PT or CT for protection relay on output of VFD)**

- PT fuses pass static checks and fuse brackets are secure.



Figure 6: Typical Output Reactor

F) Cabinet Split/Junction Point(s)

☒ **1. Connector**

- Connector connection(s) are in good condition.

☒ **2. Main Bus/Cables**

- Bus connection(s) are in good condition.

☒ **3. Ground Bus/Cables**

- Wire/cables are in good condition.

G) Low Voltage Cabinet Inspection

☒ **1. Power Supply**

- Power supply is in good condition.

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☒ 2. Device Check

- HCT and VCCT resistors are the correct values.
- Relay and contact coils are in good condition and operate correctly.
- Fans overload relays function correctly.

☒ 3. Control Voltage Checks

Voltage Measurement	Result	Actual Measurement	
		Inverter	Converter
Input Voltage Feedback (12R2-2)	Pass		
Input Voltage Feedback (2-12T2)	Pass		
Input Voltage Feedback (12T2-12R2)	Pass		
Control Voltage Feedback (1-2)	Pass		
Control Voltage P5	Pass		
Control Voltage P15	Pass		
Control Voltage N15	Pass		
Control Voltage P24	Pass		
Input Voltage (48R2-48S2)	Pass		
Input Voltage (48S2-48T2)	Pass		
Input Voltage (48T2-48R2)	Pass		

☒ 4. Motor Heater Check

Voltage	Actual Current	Calc. Current

III. Final Verification of Program

A) Parameter Checks

- ☒ 1. Compare final setfile with original setfile.
- ☒ 2. Set VFD's clock from EOI.

IV. Operation Check

A) Output Voltage and Current

- ☒ 1. Output voltage and current waveform(s) are accurate as captured by Wi Tool.

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V. Recommendations and Final Notes



Engineer Signature: _____

Date: 3/27/2018

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Additional Pictures

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Basic PM Report

Task Number	21623
Field Engineer	Hoque, Nick



Insert Picture of VFD

Site Name

Columbia university, NY

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T-300 Series VFD System

VFD DATA

Project Number	143595
Serial Number	0910011288
Typeform	M3A44050SAE
Application	Chiller
Description	

MOTOR DATA

Manufacturer	US Motor		
Model			
Serial Number			
Rotation (DE, ODE)			
Voltage	4160	Current	50.9
RPM	1760	Pole	4
Hz	60	HP	400

TRANSFORMER DATA

Manufacturer	Hammond Power		
MFG. P/N			
Serial Number			
KVA		Tertiary KVA	
	Primary	Secondary	Tertiary
Voltage	4160	635	480
Current			

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Place a check mark next to each step once completed.

I. Save Setfile & Tracesave File

A) Save current setfile

- ☒ 1. Compare with setfile from commissioning, previous PM or from default. If there are any changed parameters, make a record, and investigate potential/possible reasons for the parameter change.

B) Save Tracesave

- ☒ 1. Review “Trace back data” and explain any new faults since last PM visit.
- ☐ 2. Download data from any peripheral devices i.e. Multilin 869, etc.

II. Visual Inspection & Cleaning

All wire/cable/bus condition(s) and connection(s) should be checked, secured, re-torqued, and marked as necessary. Verify all foreign material (dust, metal, bolts etc.) is removed from the cubicle(s). Vacuum the cabinet as required, and clean the air filters.

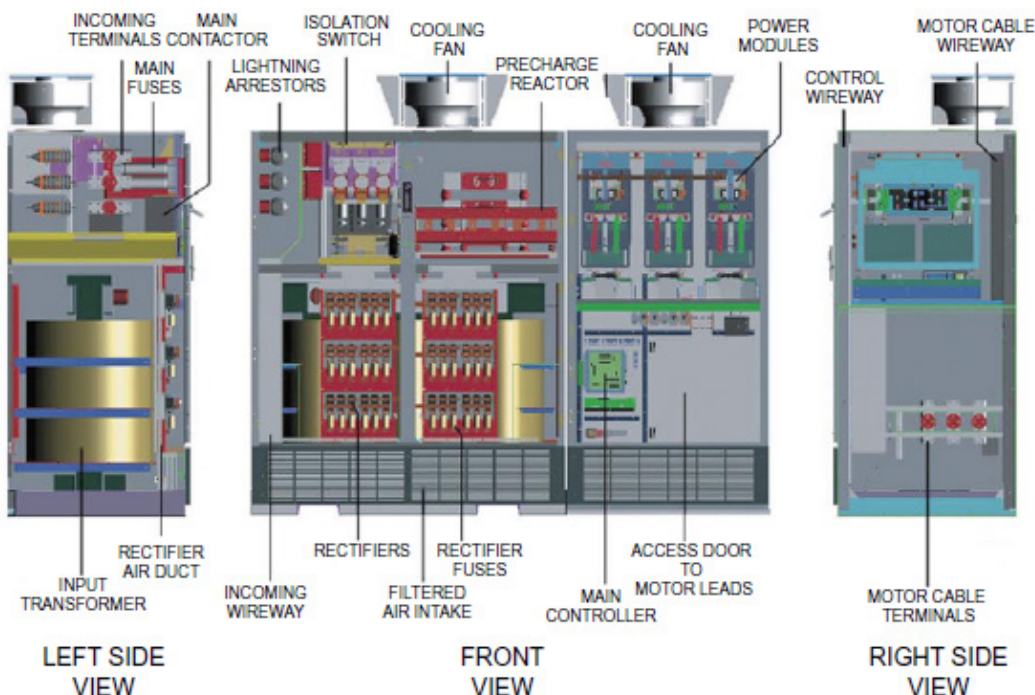


Figure 1: Typical Frame 1 4160V T300MVi (1000 to 2000HP)

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A) Input Section



1. Input Terminals

- Input terminals have been checked and are tight.



2. Cables

- There is appropriate spacing between the cable(s).



3. Switch Gear (JK)

- Switchgear has been checked for tracking and damage.



4. Pre-Charge Reactor

- Reactor has been visually inspected.

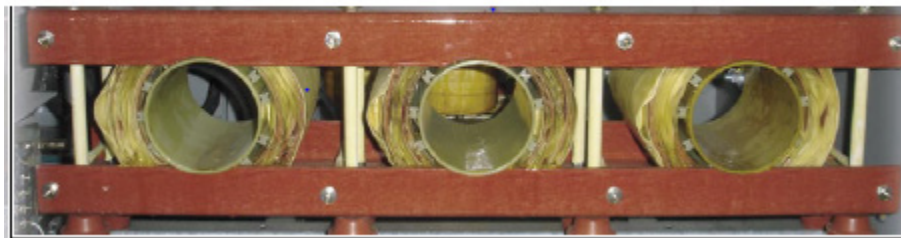


Figure 2: Typical Frame 1 Pre-Charge Reactor



5. Input PT and CT

- PTs and CTs have passed visual inspection.



Figure 3: Typical Control Power Transformer

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☒ 6. Isolation Switch

- Isolation switch is functioning properly.



Figure 4: 4160V Isolation Switch

B) Transformer Section

☒ 1. Transformer

- Transformer passes visual inspection and is free of moisture and/or foreign objects.

Transformer	R-S-T (Ω)	U(Ω)	V(Ω)	W(Ω)
1	269 G	530 G	33 G	256 G
2		336 G	256 G	241 G

☒ 2. Airflow Guides

- The baffles and airflow guides are within proper tolerances of the transformer.



Figure 5: Typical Frame 4 (4000-6000HP) Input Transformer

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☒ **3. Cooling FAN**

- The fan(s) turn freely.

C) Rectifier Section

☒ **1. Discharge Resistor**

- The discharge resistor passes static checks and visual inspection.

☒ **2. Rectifier Fuses**

- Fuses are closed and in good condition.

☒ **3. Airflow Guides**

- There is no obstruction in or around the airflow guides and heatsink.

D) Inverter Section

☒ **1. Power Module**

- Modules pass all checks and heatsink is free of debris and obstruction.
- Door Switches function as intended.

Power Module	Serial Number 1	Serial Number 2
U	091001804	
V	091001803	
W	091001802	

☒ **2. GDI Board**

- PCB passes inspection.
- Ground Fault Resistor (11R11) reads correct value.

☒ **3. Cooling FAN**

- The fans turn freely

E) Control and Output Section

☒ **1. Output Reactor and Filter Circuit**

- Reactor and filter circuit pass inspection.

☒ **2. Output Terminals**

- Terminals have been checked and are tight.

MV VFD Preventive Maintenance

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☒ 3. **HCT Cable**

- HCT and cables are secure and in good condition.

☒ 4. **Output PT and CT (If there is PT or CT for protection relay on output of VFD)**

- PT fuses pass static checks and fuse brackets are secure.



Figure 6: Typical Output Reactor

F) Cabinet Split/Junction Point(s)

☒ 1. **Connector**

- Connector connection(s) are in good condition.

☒ 2. **Main Bus/Cables**

- Bus connection(s) are in good condition.

☒ 3. **Ground Bus/Cables**

- Wire/cables are in good condition.

G) Low Voltage Cabinet Inspection

☒ 1. **Power Supply**

- Power supply is in good condition.

MV VFD Preventive Maintenance

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☒ 2. Device Check

- HCT and VCCT resistors are the correct values.
- Relay and contact coils are in good condition and operate correctly.
- Fans overload relays function correctly.

☒ 3. Control Voltage Checks

Voltage Measurement	Result	Actual Measurement	
		Inverter	Converter
Input Voltage Feedback (12R2-2)	Pass		
Input Voltage Feedback (2-12T2)	Pass		
Input Voltage Feedback (12T2-12R2)	Pass		
Control Voltage Feedback (1-2)	Pass		
Control Voltage P5	Pass		
Control Voltage P15	Pass		
Control Voltage N15	Pass		
Control Voltage P24	Pass		
Input Voltage (48R2-48S2)	Pass		
Input Voltage (48S2-48T2)	Pass		
Input Voltage (48T2-48R2)	Pass		

☒ 4. Motor Heater Check

Voltage	Actual Current	Calc. Current

III. Final Verification of Program

A) Parameter Checks

- ☒ 1. Compare final setfile with original setfile.
- ☒ 2. Set VFD's clock from EOI.

IV. Operation Check

A) Output Voltage and Current

- ☒ 1. Output voltage and current waveform(s) are accurate as captured by Wi Tool.

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V. Recommendations and Final Notes



Engineer Signature: _____

Date: 3/28/2018

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Additional Pictures

MV VFD Preventive Maintenance

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Basic PM Report

Task Number	21623
Field Engineer	Hoque, Nick



Insert Picture of VFD

Site Name

Columbia university, NY

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T-300 Series VFD System

VFD DATA

Project Number	149702
Serial Number	140800268
Typeform	M3A44040SAE
Application	Chiller
Description	

MOTOR DATA

Manufacturer	US Motor		
Model			
Serial Number			
Rotation (DE, ODE)			
Voltage	4160	Current	50.9
RPM	1760	Pole	1760
Hz	60	HP	400

TRANSFORMER DATA

Manufacturer	Norlake		
MFG. P/N	N/A		
Serial Number			
KVA		Tertiary KVA	
	Primary	Secondary	Tertiary
Voltage	4160	635	480
Current			

MV VFD Preventive Maintenance

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Place a check mark next to each step once completed.

I. Save Setfile & Tracesave File

A) Save current setfile

- ☒ 1. Compare with setfile from commissioning, previous PM or from default. If there are any changed parameters, make a record, and investigate potential/possible reasons for the parameter change.

B) Save Tracesave

- ☒ 1. Review “Trace back data” and explain any new faults since last PM visit.
- ☐ 2. Download data from any peripheral devices i.e. Multilin 869, etc.

II. Visual Inspection & Cleaning

All wire/cable/bus condition(s) and connection(s) should be checked, secured, re-torqued, and marked as necessary. Verify all foreign material (dust, metal, bolts etc.) is removed from the cubicle(s). Vacuum the cabinet as required, and clean the air filters.

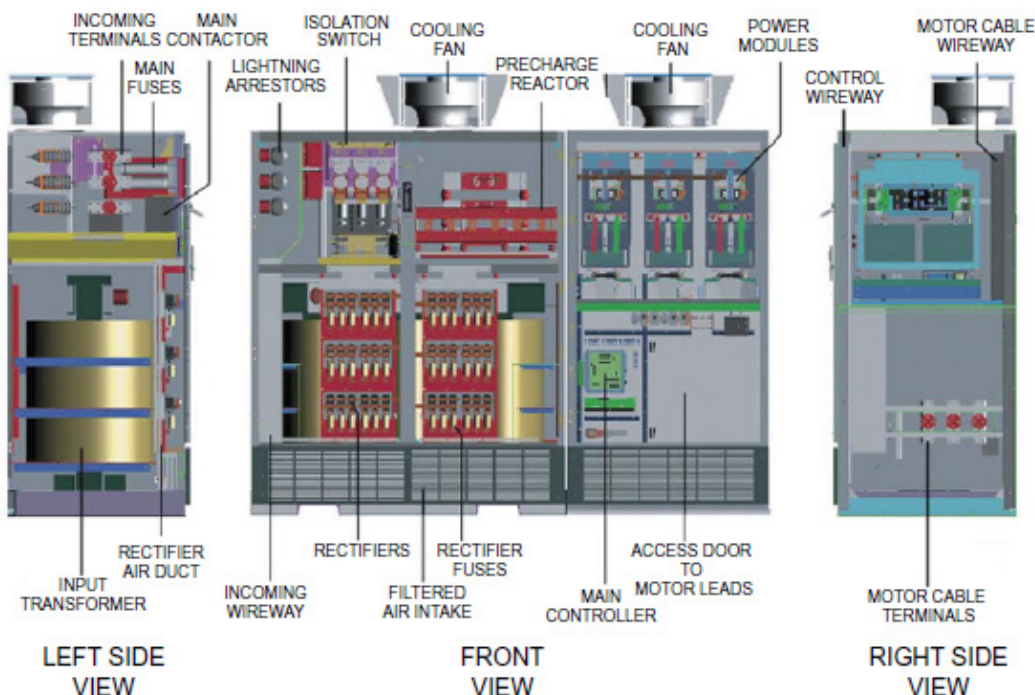


Figure 1: Typical Frame 1 4160V T300MVi (1000 to 2000HP)

MV VFD Preventive Maintenance

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A) Input Section



1. Input Terminals

- Input terminals have been checked and are tight.



2. Cables

- There is appropriate spacing between the cable(s).



3. Switch Gear (JK)

- Switchgear has been checked for tracking and damage.



4. Pre-Charge Reactor

- Reactor has been visually inspected.

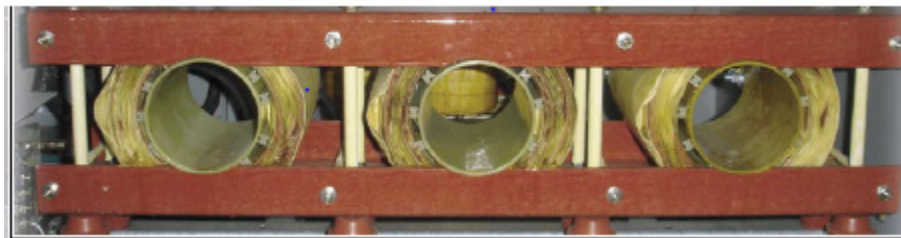


Figure 2: Typical Frame 1 Pre-Charge Reactor



5. Input PT and CT

- PTs and CTs have passed visual inspection.



Figure 3: Typical Control Power Transformer

MV VFD Preventive Maintenance

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☒ 6. Isolation Switch

- Isolation switch is functioning properly.



Figure 4: 4160V Isolation Switch

B) Transformer Section

☒ 1. Transformer

- Transformer passes visual inspection and is free of moisture and/or foreign objects.

Transformer	R-S-T (Ω)	U(Ω)	V(Ω)	W(Ω)
1	138 G	386 G	329 G	313 G
2		186 G	503 G	109 G

☒ 2. Airflow Guides

- The baffles and airflow guides are within proper tolerances of the transformer.



Figure 5: Typical Frame 4 (4000-6000HP) Input Transformer

MV VFD Preventive Maintenance

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☒ 3. Cooling FAN

- The fan(s) turn freely.

C) Rectifier Section

☒ 1. Discharge Resistor

- The discharge resistor passes static checks and visual inspection.

☒ 2. Rectifier Fuses

- Fuses are closed and in good condition.

☒ 3. Airflow Guides

- There is no obstruction in or around the airflow guides and heatsink.

D) Inverter Section

☒ 1. Power Module

- Modules pass all checks and heatsink is free of debris and obstruction.
- Door Switches function as intended.

Power Module	Serial Number 1	Serial Number 2
U	140603207	
V	140701553	
W	140701545	

☒ 2. GDI Board

- PCB passes inspection.
- Ground Fault Resistor (11R11) reads correct value.

☒ 3. Cooling FAN

- The fans turn freely

E) Control and Output Section

☒ 1. Output Reactor and Filter Circuit

- Reactor and filter circuit pass inspection.

☒ 2. Output Terminals

- Terminals have been checked and are tight.

MV VFD Preventive Maintenance

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☒ **3. HCT Cable**

- HCT and cables are secure and in good condition.

☒ **4. Output PT and CT (If there is PT or CT for protection relay on output of VFD)**

- PT fuses pass static checks and fuse brackets are secure.



Figure 6: Typical Output Reactor

F) Cabinet Split/Junction Point(s)

☒ **1. Connector**

- Connector connection(s) are in good condition.

☒ **2. Main Bus/Cables**

- Bus connection(s) are in good condition.

☒ **3. Ground Bus/Cables**

- Wire/cables are in good condition.

G) Low Voltage Cabinet Inspection

☒ **1. Power Supply**

- Power supply is in good condition.

MV VFD Preventive Maintenance

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☒ 2. Device Check

- HCT and VCCT resistors are the correct values.
- Relay and contact coils are in good condition and operate correctly.
- Fans overload relays function correctly.

☒ 3. Control Voltage Checks

Voltage Measurement	Result	Actual Measurement	
		Inverter	Converter
Input Voltage Feedback (12R2-2)	Pass		
Input Voltage Feedback (2-12T2)	Pass		
Input Voltage Feedback (12T2-12R2)	Pass		
Control Voltage Feedback (1-2)	Pass		
Control Voltage P5	Pass		
Control Voltage P15	Pass		
Control Voltage N15	Pass		
Control Voltage P24	Pass		
Input Voltage (48R2-48S2)	Pass		
Input Voltage (48S2-48T2)	Pass		
Input Voltage (48T2-48R2)	Pass		

☐ 4. Motor Heater Check

Voltage	Actual Current	Calc. Current

III. Final Verification of Program

A) Parameter Checks

- ☒ 1. Compare final setfile with original setfile.
- ☒ 2. Set VFD's clock from EOI.

IV. Operation Check

A) Output Voltage and Current

- ☒ 1. Output voltage and current waveform(s) are accurate as captured by Wi Tool.

MV VFD Preventive Maintenance

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V. Recommendations and Final Notes



Engineer Signature: _____

Date: 3/29/2018

MV VFD Preventive Maintenance

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Additional Pictures

MV VFD Preventive Maintenance

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Basic PM Report

Task Number	21623
Field Engineer	Hoque, Nick



Insert Picture of VFD

Site Name

Columbia university, NY

MV VFD Preventive Maintenance

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T-300 Series VFD System

VFD DATA

Project Number	143595
Serial Number	091001409
Typeform	M3A44040SAE
Application	Chiller
Description	

MOTOR DATA

Manufacturer	Reliance Electric Company		
Model	11OBCO2J3OX		
Serial Number			
Rotation (DE, ODE)			
Voltage	4160	Current	50.9
RPM	1783	Pole	4.0
Hz	60	HP	400

TRANSFORMER DATA

Manufacturer	Hammond Power		
MFG. P/N	N/A		
Serial Number			
KVA	30 KVA	Tertiary KVA	
	Primary	Secondary	Tertiary
Voltage	4160	635	480
Current			

MV VFD Preventive Maintenance

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Place a check mark next to each step once completed.

I. Save Setfile & Tracesave File

A) Save current setfile

- ☒ 1. Compare with setfile from commissioning, previous PM or from default. If there are any changed parameters, make a record, and investigate potential/possible reasons for the parameter change.

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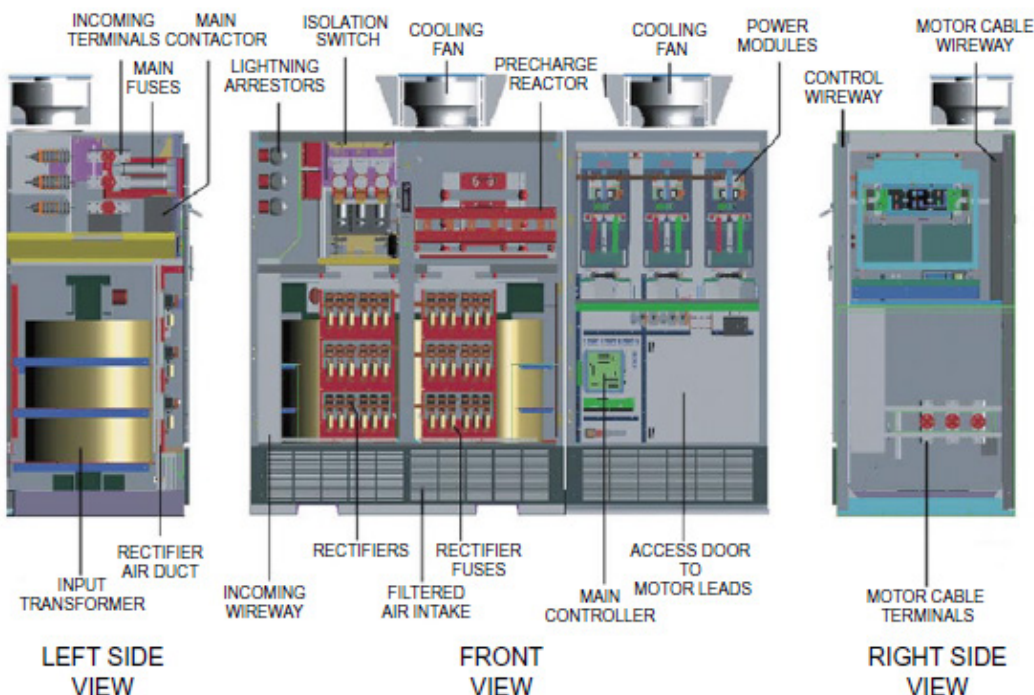


Figure 1: Typical Frame 1 4160V T300MVi (1000 to 2000HP)

MV VFD Preventive Maintenance

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A) Input Section



1. Input Terminals

- Input terminals have been checked and are tight.



2. Cables

- There is appropriate spacing between the cable(s).



3. Switch Gear (JK)

- Switchgear has been checked for tracking and damage.



4. Pre-Charge Reactor

- Reactor has been visually inspected.

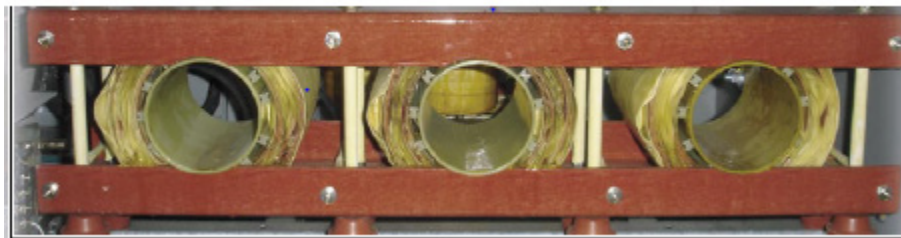


Figure 2: Typical Frame 1 Pre-Charge Reactor



5. Input PT and CT

- PTs and CTs have passed visual inspection.



Figure 3: Typical Control Power Transformer

MV VFD Preventive Maintenance

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☒ 6. Isolation Switch

- Isolation switch is functioning properly.



Figure 4: 4160V Isolation Switch

B) Transformer Section

☒ 1. Transformer

- Transformer passes visual inspection and is free of moisture and/or foreign objects.

Transformer	R-S-T (Ω)	U(Ω)	V(Ω)	W(Ω)
1	237 G	207 G	309 G	319 G
2		186 G	503 G	109 G

☒ 2. Airflow Guides

- The baffles and airflow guides are within proper tolerances of the transformer.



Figure 5: Typical Frame 4 (4000-6000HP) Input Transformer

MV VFD Preventive Maintenance

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☒ 3. Cooling FAN

- The fan(s) turn freely.

C) Rectifier Section

☒ 1. Discharge Resistor

- The discharge resistor passes static checks and visual inspection.

☒ 2. Rectifier Fuses

- Fuses are closed and in good condition.

☒ 3. Airflow Guides

- There is no obstruction in or around the airflow guides and heatsink.

D) Inverter Section

☒ 1. Power Module

- Modules pass all checks and heatsink is free of debris and obstruction.
- Door Switches function as intended.

Power Module	Serial Number 1	Serial Number 2
U	091001293	
V	091001289	
W	091001290	

☒ 2. GDI Board

- PCB passes inspection.
- Ground Fault Resistor (11R11) reads correct value.

☒ 3. Cooling FAN

- The fans turn freely

E) Control and Output Section

☒ 1. Output Reactor and Filter Circuit

- Reactor and filter circuit pass inspection.

☒ 2. Output Terminals

- Terminals have been checked and are tight.

MV VFD Preventive Maintenance

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☒ 3. **HCT Cable**

- HCT and cables are secure and in good condition.

☒ 4. **Output PT and CT (If there is PT or CT for protection relay on output of VFD)**

- PT fuses pass static checks and fuse brackets are secure.



Figure 6: Typical Output Reactor

F) Cabinet Split/Junction Point(s)

☒ 1. **Connector**

- Connector connection(s) are in good condition.

☒ 2. **Main Bus/Cables**

- Bus connection(s) are in good condition.

☒ 3. **Ground Bus/Cables**

- Wire/cables are in good condition.

G) Low Voltage Cabinet Inspection

☒ 1. **Power Supply**

- Power supply is in good condition.

MV VFD Preventive Maintenance

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☒ 2. Device Check

- HCT and VCCT resistors are the correct values.
- Relay and contact coils are in good condition and operate correctly.
- Fans overload relays function correctly.

☒ 3. Control Voltage Checks

Voltage Measurement	Result	Actual Measurement	
		Inverter	Converter
Input Voltage Feedback (12R2-2)	Pass		
Input Voltage Feedback (2-12T2)	Pass		
Input Voltage Feedback (12T2-12R2)	Pass		
Control Voltage Feedback (1-2)	Pass		
Control Voltage P5	Pass		
Control Voltage P15	Pass		
Control Voltage N15	Pass		
Control Voltage P24	Pass		
Input Voltage (48R2-48S2)	Pass		
Input Voltage (48S2-48T2)	Pass		
Input Voltage (48T2-48R2)	Pass		

☐ 4. Motor Heater Check

Voltage	Actual Current	Calc. Current

III. Final Verification of Program

A) Parameter Checks

- ☒ 1. Compare final setfile with original setfile.
- ☒ 2. Set VFD's clock from EOI.

IV. Operation Check

A) Output Voltage and Current

- ☒ 1. Output voltage and current waveform(s) are accurate as captured by Wi Tool.

MV VFD Preventive Maintenance

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V. Recommendations and Final Notes



Engineer Signature: _____

Date: 3/30/2018

MV VFD Preventive Maintenance

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Additional Pictures

MV VFD Preventive Maintenance

Page 1 of 10

Basic PM Report

Task Number	21623
Field Engineer	Hoque, Nick



Insert Picture of VFD

Site Name

Columbia university, NY

MV VFD Preventive Maintenance

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T-300 Series VFD System

VFD DATA

Project Number	149702
Serial Number	140800266
Typeform	M3A44040SAE
Application	Chiller
Description	

MOTOR DATA

Manufacturer	US Motor		
Model			
Serial Number			
Rotation (DE, ODE)			
Voltage	4160	Current	50.9
RPM	1760	Pole	4
Hz	60	HP	400

TRANSFORMER DATA

Manufacturer	Norlake		
MFG. P/N			
Serial Number			
KVA		Tertiary KVA	
	Primary	Secondary	Tertiary
Voltage	4160	635	480
Current			

MV VFD Preventive Maintenance

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Place a check mark next to each step once completed.

I. Save Setfile & Tracesave File

A) Save current setfile

- ☒ 1. Compare with setfile from commissioning, previous PM or from default. If there are any changed parameters, make a record, and investigate potential/possible reasons for the parameter change.

B) Save Tracesave

- ☒ 1. Review “Trace back data” and explain any new faults since last PM visit.
- ☐ 2. Download data from any peripheral devices i.e. Multilin 869, etc.

II. Visual Inspection & Cleaning

All wire/cable/bus condition(s) and connection(s) should be checked, secured, re-torqued, and marked as necessary. Verify all foreign material (dust, metal, bolts etc.) is removed from the cubicle(s). Vacuum the cabinet as required, and clean the air filters.

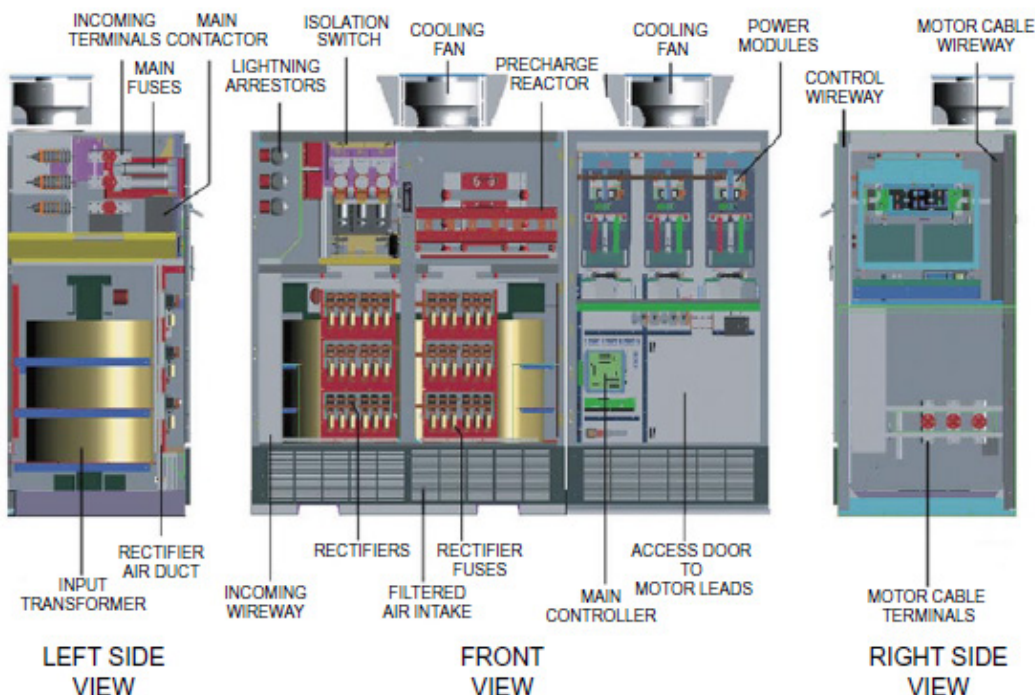


Figure 1: Typical Frame 1 4160V T300MVi (1000 to 2000HP)

MV VFD Preventive Maintenance

Page 4 of 10

A) Input Section



1. Input Terminals

- Input terminals have been checked and are tight.



2. Cables

- There is appropriate spacing between the cable(s).



3. Switch Gear (JK)

- Switchgear has been checked for tracking and damage.



4. Pre-Charge Reactor

- Reactor has been visually inspected.

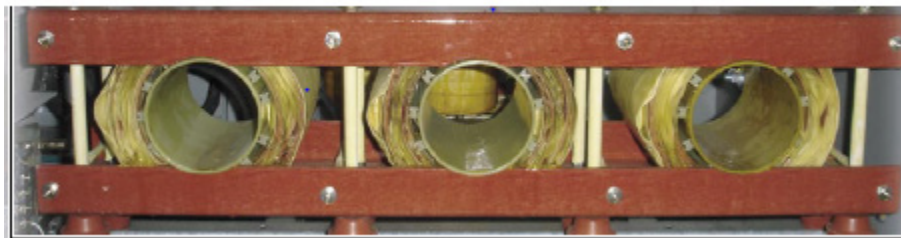


Figure 2: Typical Frame 1 Pre-Charge Reactor



5. Input PT and CT

- PTs and CTs have passed visual inspection.



Figure 3: Typical Control Power Transformer

MV VFD Preventive Maintenance

Page 5 of 10

☒ 6. Isolation Switch

- Isolation switch is functioning properly.



Figure 4: 4160V Isolation Switch

B) Transformer Section

☒ 1. Transformer

- Transformer passes visual inspection and is free of moisture and/or foreign objects.

Transformer	R-S-T (Ω)	U(Ω)	V(Ω)	W(Ω)
1	187 G	254 G	309 G	319 G
2		186 G	503 G	109 G

☒ 2. Airflow Guides

- The baffles and airflow guides are within proper tolerances of the transformer.



Figure 5: Typical Frame 4 (4000-6000HP) Input Transformer

MV VFD Preventive Maintenance

Page 6 of 10

☒ **3. Cooling FAN**

- The fan(s) turn freely.

C) Rectifier Section

☒ **1. Discharge Resistor**

- The discharge resistor passes static checks and visual inspection.

☒ **2. Rectifier Fuses**

- Fuses are closed and in good condition.

☒ **3. Airflow Guides**

- There is no obstruction in or around the airflow guides and heatsink.

D) Inverter Section

☒ **1. Power Module**

- Modules pass all checks and heatsink is free of debris and obstruction.
- Door Switches function as intended.

Power Module	Serial Number 1	Serial Number 2
U	140700592	
V	140700589	
W	140700584	

☒ **2. GDI Board**

- PCB passes inspection.
- Ground Fault Resistor (11R11) reads correct value.

☒ **3. Cooling FAN**

- The fans turn freely

E) Control and Output Section

☒ **1. Output Reactor and Filter Circuit**

- Reactor and filter circuit pass inspection.

☒ **2. Output Terminals**

- Terminals have been checked and are tight.

MV VFD Preventive Maintenance

Page 7 of 10

- ☒ **3. HCT Cable**
 - HCT and cables are secure and in good condition.
- ☒ **4. Output PT and CT (If there is PT or CT for protection relay on output of VFD)**
 - PT fuses pass static checks and fuse brackets are secure.



Figure 6: Typical Output Reactor

F) Cabinet Split/Junction Point(s)

- ☒ **1. Connector**
 - Connector connection(s) are in good condition.
- ☒ **2. Main Bus/Cables**
 - Bus connection(s) are in good condition.
- ☒ **3. Ground Bus/Cables**
 - Wire/cables are in good condition.

G) Low Voltage Cabinet Inspection

- ☒ **1. Power Supply**
 - Power supply is in good condition.

MV VFD Preventive Maintenance

Page 8 of 10

☒ 2. Device Check

- HCT and VCCT resistors are the correct values.
- Relay and contact coils are in good condition and operate correctly.
- Fans overload relays function correctly.

☒ 3. Control Voltage Checks

Voltage Measurement	Result	Actual Measurement	
		Inverter	Converter
Input Voltage Feedback (12R2-2)	Pass		
Input Voltage Feedback (2-12T2)	Pass		
Input Voltage Feedback (12T2-12R2)	Pass		
Control Voltage Feedback (1-2)	Pass		
Control Voltage P5	Pass		
Control Voltage P15	Pass		
Control Voltage N15	Pass		
Control Voltage P24	Pass		
Input Voltage (48R2-48S2)	Pass		
Input Voltage (48S2-48T2)	Pass		
Input Voltage (48T2-48R2)	Pass		

☒ 4. Motor Heater Check

Voltage	Actual Current	Calc. Current

III. Final Verification of Program

A) Parameter Checks

- ☒ 1. Compare final setfile with original setfile.
- ☒ 2. Set VFD's clock from EOI.

IV. Operation Check

A) Output Voltage and Current

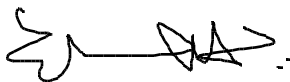
- ☒ 1. Output voltage and current waveform(s) are accurate as captured by Wi Tool.

MV VFD Preventive Maintenance

Page 9 of 10

V. Recommendations and Final Notes

Isolation switch wasn't opening properly. There was a loose bolt on the bracket. After tight the bolt it was working without any issues. There was also a broken fuse standoff on U phase. It was replaced with new ones. VFD was tested with motor and working properly.



Engineer Signature: _____

Date: 3/31/2018

MV VFD Preventive Maintenance

Page **10** of **10**

Additional Pictures

MV VFD Preventive Maintenance

Page 1 of 10

Basic PM Report

Task Number	21623
Field Engineer	Hoque, Nick



Insert Picture of VFD

Site Name

Columbia university

MV VFD Preventive Maintenance

Page 2 of 10

T-300 Series VFD System

VFD DATA

Project Number	149702
Serial Number	140800265
Typeform	M3A44040SAE
Application	Chiller
Description	

MOTOR DATA

Manufacturer	Reliance Electric		
Model			
Serial Number			
Rotation (DE, ODE)			
Voltage	4160	Current	50.9
RPM	1760	Pole	4
Hz	60	HP	400

TRANSFORMER DATA

Manufacturer	Norlake		
MFG. P/N			
Serial Number			
KVA		Tertiary KVA	
	Primary	Secondary	Tertiary
Voltage	4160	635	480
Current			

MV VFD Preventive Maintenance

Page 3 of 10

Place a check mark next to each step once completed.

I. Save Setfile & Tracesave File

A) Save current setfile

- ☒ 1. Compare with setfile from commissioning, previous PM or from default. If there are any changed parameters, make a record, and investigate potential/possible reasons for the parameter change.

B) Save Tracesave

- ☒ 1. Review “Trace back data” and explain any new faults since last PM visit.
- ☐ 2. Download data from any peripheral devices i.e. Multilin 869, etc.

II. Visual Inspection & Cleaning

All wire/cable/bus condition(s) and connection(s) should be checked, secured, re-torqued, and marked as necessary. Verify all foreign material (dust, metal, bolts etc.) is removed from the cubicle(s). Vacuum the cabinet as required, and clean the air filters.

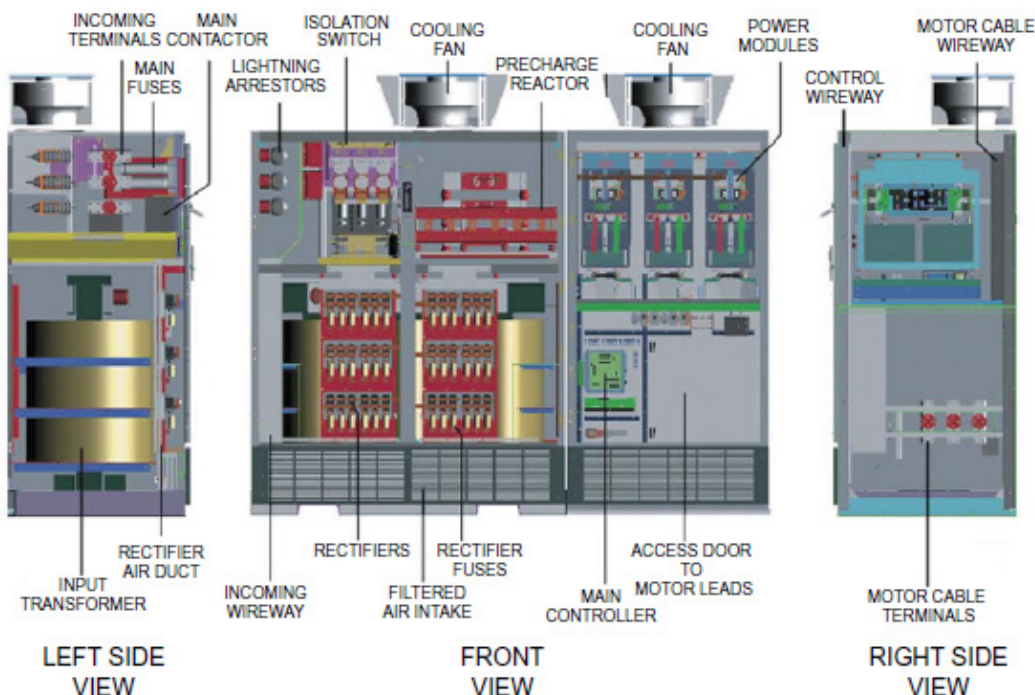


Figure 1: Typical Frame 1 4160V T300MVi (1000 to 2000HP)

MV VFD Preventive Maintenance

Page 4 of 10

A) Input Section



1. Input Terminals

- Input terminals have been checked and are tight.



2. Cables

- There is appropriate spacing between the cable(s).



3. Switch Gear (JK)

- Switchgear has been checked for tracking and damage.



4. Pre-Charge Reactor

- Reactor has been visually inspected.

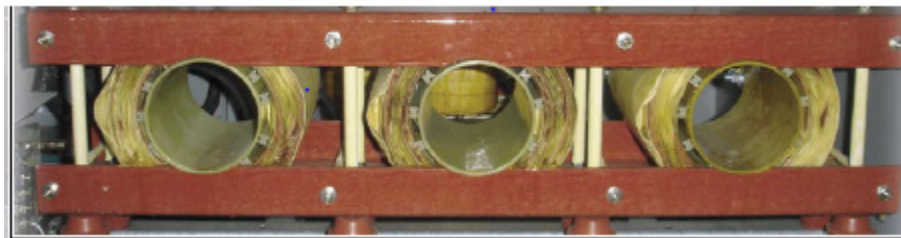


Figure 2: Typical Frame 1 Pre-Charge Reactor



5. Input PT and CT

- PTs and CTs have passed visual inspection.



Figure 3: Typical Control Power Transformer

MV VFD Preventive Maintenance

Page 5 of 10

☒ 6. Isolation Switch

- Isolation switch is functioning properly.



Figure 4: 4160V Isolation Switch

B) Transformer Section

☒ 1. Transformer

- Transformer passes visual inspection and is free of moisture and/or foreign objects.

Transformer	R-S-T (Ω)	U(Ω)	V(Ω)	W(Ω)
1	263 G	297 G	234 G	143 G
2		211 G	150 G	168 G

☒ 2. Airflow Guides

- The baffles and airflow guides are within proper tolerances of the transformer.



Figure 5: Typical Frame 4 (4000-6000HP) Input Transformer

MV VFD Preventive Maintenance

Page 6 of 10

☒ 3. Cooling FAN

- The fan(s) turn freely.

C) Rectifier Section

☒ 1. Discharge Resistor

- The discharge resistor passes static checks and visual inspection.

☒ 2. Rectifier Fuses

- Fuses are closed and in good condition.

☒ 3. Airflow Guides

- There is no obstruction in or around the airflow guides and heatsink.

D) Inverter Section

☒ 1. Power Module

- Modules pass all checks and heatsink is free of debris and obstruction.
- Door Switches function as intended.

Power Module	Serial Number 1	Serial Number 2
U	140700588	
V	140603200	
W	140700591	

☒ 2. GDI Board

- PCB passes inspection.
- Ground Fault Resistor (11R11) reads correct value.

☒ 3. Cooling FAN

- The fans turn freely

E) Control and Output Section

☒ 1. Output Reactor and Filter Circuit

- Reactor and filter circuit pass inspection.

☒ 2. Output Terminals

- Terminals have been checked and are tight.

MV VFD Preventive Maintenance

Page 7 of 10

☒ 3. **HCT Cable**

- HCT and cables are secure and in good condition.

☒ 4. **Output PT and CT (If there is PT or CT for protection relay on output of VFD)**

- PT fuses pass static checks and fuse brackets are secure.



Figure 6: Typical Output Reactor

F) Cabinet Split/Junction Point(s)

☒ 1. **Connector**

- Connector connection(s) are in good condition.

☒ 2. **Main Bus/Cables**

- Bus connection(s) are in good condition.

☒ 3. **Ground Bus/Cables**

- Wire/cables are in good condition.

G) Low Voltage Cabinet Inspection

☒ 1. **Power Supply**

- Power supply is in good condition.

MV VFD Preventive Maintenance

Page 8 of 10

☒ 2. Device Check

- HCT and VCCT resistors are the correct values.
- Relay and contact coils are in good condition and operate correctly.
- Fans overload relays function correctly.

☒ 3. Control Voltage Checks

Voltage Measurement	Result	Actual Measurement	
		Inverter	Converter
Input Voltage Feedback (12R2-2)	Pass		
Input Voltage Feedback (2-12T2)	Pass		
Input Voltage Feedback (12T2-12R2)	Pass		
Control Voltage Feedback (1-2)	Pass		
Control Voltage P5	Pass		
Control Voltage P15	Pass		
Control Voltage N15	Pass		
Control Voltage P24	Pass		
Input Voltage (48R2-48S2)	Pass		
Input Voltage (48S2-48T2)	Pass		
Input Voltage (48T2-48R2)	Pass		

☒ 4. Motor Heater Check

Voltage	Actual Current	Calc. Current

III. Final Verification of Program

A) Parameter Checks

☒ 1. Compare final setfile with original setfile.

☒ 2. Set VFD's clock from EOI.

IV. Operation Check

A) Output Voltage and Current

☒ 1. Output voltage and current waveform(s) are accurate as captured by Wi Tool.

MV VFD Preventive Maintenance

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V. Recommendations and Final Notes



Engineer Signature: _____

Date: 3/31/2018

MV VFD Preventive Maintenance

Page 10 of 10

Additional Pictures

MV VFD Preventive Maintenance

Page 1 of 10

Basic PM Report

Task Number	21623
Field Engineer	Hoque, Nick



Insert Picture of VFD

Site Name

Columbia university, NY

MV VFD Preventive Maintenance

Page 2 of 10

T-300 Series VFD System

VFD DATA

Project Number	143595
Serial Number	091001287
Typeform	M3A44070SAE
Application	Chiller
Description	

MOTOR DATA

Manufacturer	Reliance Electric Company		
Model	Three Phase Induction Motor		
Serial Number			
Rotation (DE, ODE)			
Voltage	4160	Current	50.9
RPM	1783	Pole	4
Hz	60	HP	400

TRANSFORMER DATA

Manufacturer	Hamond Power		
MFG. P/N			
Serial Number			
KVA		Tertiary KVA	
	Primary	Secondary	Tertiary
Voltage	4160	635	480
Current			

MV VFD Preventive Maintenance

Page 3 of 10

Place a check mark next to each step once completed.

I. Save Setfile & Tracesave File

A) Save current setfile

- ☒ 1. Compare with setfile from commissioning, previous PM or from default. If there are any changed parameters, make a record, and investigate potential/possible reasons for the parameter change.

B) Save Tracesave

- ☒ 1. Review “Trace back data” and explain any new faults since last PM visit.
- ☐ 2. Download data from any peripheral devices i.e. Multilin 869, etc.

II. Visual Inspection & Cleaning

All wire/cable/bus condition(s) and connection(s) should be checked, secured, re-torqued, and marked as necessary. Verify all foreign material (dust, metal, bolts etc.) is removed from the cubicle(s). Vacuum the cabinet as required, and clean the air filters.

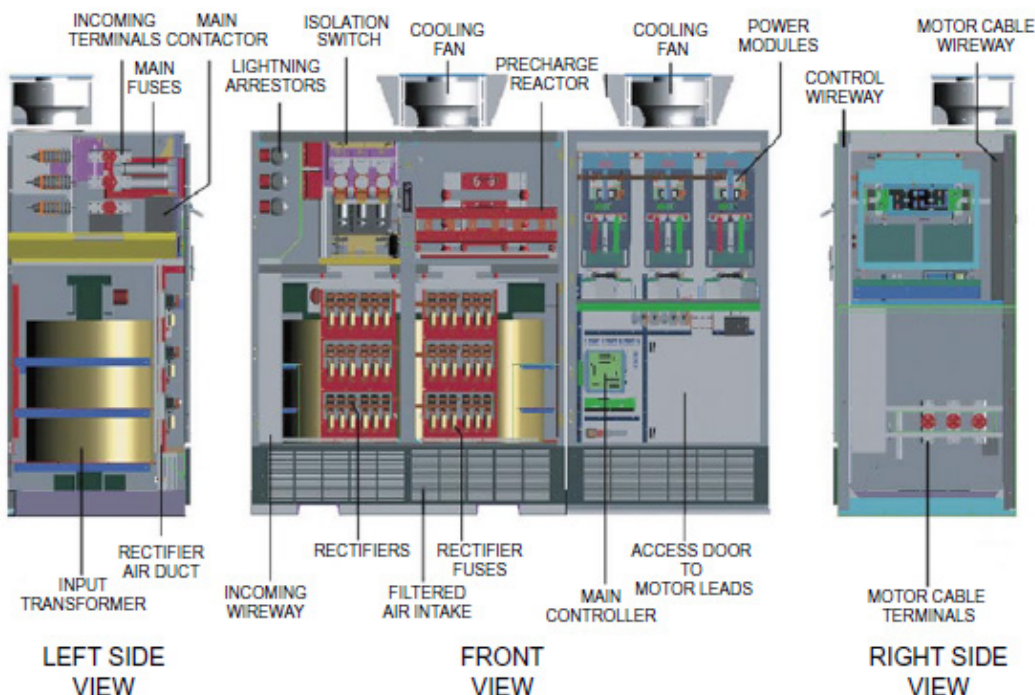


Figure 1: Typical Frame 1 4160V T300MVi (1000 to 2000HP)

MV VFD Preventive Maintenance

Page 4 of 10

A) Input Section



1. Input Terminals

- Input terminals have been checked and are tight.



2. Cables

- There is appropriate spacing between the cable(s).



3. Switch Gear (JK)

- Switchgear has been checked for tracking and damage.



4. Pre-Charge Reactor

- Reactor has been visually inspected.

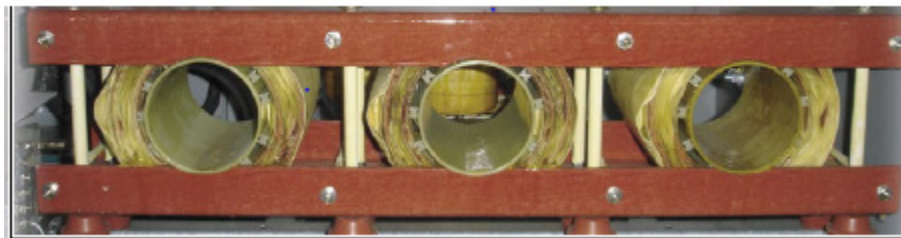


Figure 2: Typical Frame 1 Pre-Charge Reactor



5. Input PT and CT

- PTs and CTs have passed visual inspection.



Figure 3: Typical Control Power Transformer

MV VFD Preventive Maintenance

Page 5 of 10

☒ 6. Isolation Switch

- Isolation switch is functioning properly.



Figure 4: 4160V Isolation Switch

B) Transformer Section

☒ 1. Transformer

- Transformer passes visual inspection and is free of moisture and/or foreign objects.

Transformer	R-S-T (Ω)	U(Ω)	V(Ω)	W(Ω)
1	209 G	55 G	541 G	519 G
2		279 G	503 G	10 G

☒ 2. Airflow Guides

- The baffles and airflow guides are within proper tolerances of the transformer.



Figure 5: Typical Frame 4 (4000-6000HP) Input Transformer

MV VFD Preventive Maintenance

Page 6 of 10

☒ 3. Cooling FAN

- The fan(s) turn freely.

C) Rectifier Section

☒ 1. Discharge Resistor

- The discharge resistor passes static checks and visual inspection.

☒ 2. Rectifier Fuses

- Fuses are closed and in good condition.

☒ 3. Airflow Guides

- There is no obstruction in or around the airflow guides and heatsink.

D) Inverter Section

☒ 1. Power Module

- Modules pass all checks and heatsink is free of debris and obstruction.
- Door Switches function as intended.

Power Module	Serial Number 1	Serial Number 2
U	091001292	
V	091001291	
W	091001294	

☒ 2. GDI Board

- PCB passes inspection.
- Ground Fault Resistor (11R11) reads correct value.

☒ 3. Cooling FAN

- The fans turn freely

E) Control and Output Section

☒ 1. Output Reactor and Filter Circuit

- Reactor and filter circuit pass inspection.

☒ 2. Output Terminals

- Terminals have been checked and are tight.

MV VFD Preventive Maintenance

Page 7 of 10

- ☒ 3. **HCT Cable**
 - HCT and cables are secure and in good condition.
- ☒ 4. **Output PT and CT (If there is PT or CT for protection relay on output of VFD)**
 - PT fuses pass static checks and fuse brackets are secure.



Figure 6: Typical Output Reactor

F) Cabinet Split/Junction Point(s)

- ☒ 1. **Connector**
 - Connector connection(s) are in good condition.
- ☒ 2. **Main Bus/Cables**
 - Bus connection(s) are in good condition.
- ☒ 3. **Ground Bus/Cables**
 - Wire/cables are in good condition.

G) Low Voltage Cabinet Inspection

- ☒ 1. **Power Supply**
 - Power supply is in good condition.

MV VFD Preventive Maintenance

Page 8 of 10

☒ 2. Device Check

- HCT and VCCT resistors are the correct values.
- Relay and contact coils are in good condition and operate correctly.
- Fans overload relays function correctly.

☒ 3. Control Voltage Checks

Voltage Measurement	Result	Actual Measurement	
		Inverter	Converter
Input Voltage Feedback (12R2-2)	Pass		
Input Voltage Feedback (2-12T2)	Pass		
Input Voltage Feedback (12T2-12R2)	Pass		
Control Voltage Feedback (1-2)	Pass		
Control Voltage P5	Pass		
Control Voltage P15	Pass		
Control Voltage N15	Pass		
Control Voltage P24	Pass		
Input Voltage (48R2-48S2)	Pass		
Input Voltage (48S2-48T2)	Pass		
Input Voltage (48T2-48R2)	Pass		

☒ 4. Motor Heater Check

Voltage	Actual Current	Calc. Current
120		

III. Final Verification of Program

A) Parameter Checks

☒ 1. Compare final setfile with original setfile.

☒ 2. Set VFD's clock from EOI.

IV. Operation Check

A) Output Voltage and Current

☒ 1. Output voltage and current waveform(s) are accurate as captured by Wi Tool.

MV VFD Preventive Maintenance

Page 9 of 10

V. Recommendations and Final Notes



Engineer Signature: _____

Date: 3/30/2018

MV VFD Preventive Maintenance

Page **10** of **10**

Additional Pictures

Toshiba International Corporation

Field Service Report

Daily Sheet

I. CUSTOMER AND EQUIPMENT INFORMATION

Task Number	21623	Service Engineer	Hoque, Nick
Customer	ADE Systems Inc.		
End User	Columbia university		
Work Site	410 West 118th Street, New York, NY. 10027		
Site Address			
Contact	Sean Mcloskey	Contact Phone	516 300 2872
Application			
Description			

II. TIME LOG

Date	Day	Start Time	Stop Time	Hours	Work Type	Notes
3/26/2018	Monday	6:30 AM	4:30 PM	10.00	Travel	
Total Hours				10.00	Standby: Travel: Work: Overtime: Yes	Initials: RA

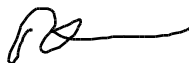
III. NOTES

Travelled from Katy, Texas to New York, NY.

Site Electrician or Representative Print Name: Robert Allen

Date: 3/26/2018

Site Electrician or Representative Signature:



Engineer Signature:



Toshiba International Corporation

Field Service Report

Daily Sheet

I. CUSTOMER AND EQUIPMENT INFORMATION

Task Number	21623	Service Engineer	Hoque, Nick
Customer	ADE Systems Inc.		
End User	Columbia university		
Work Site	410 West 118th Street, New York, NY. 10027		
Site Address			
Contact	Sean Mcloskey	Contact Phone	516 300 2872
Application			
Description			

II. TIME LOG

Date	Day	Start Time	Stop Time	Hours	Work Type	Notes
3/27/2018	Tuesday	7:00 AM	7:30 AM	.50	Travel	
		7:30 AM	6:30 PM	11.00	Work	
		6:30 PM	7:00 PM	.50	Travel	
Total Hours				12.00	Standby: Travel: Work: Overtime: Yes	Initials: RA

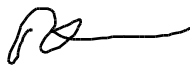
III. NOTES

Completed P.M on Chiller #7 and started the PM on chiller # 5.

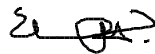
Site Electrician or Representative Print Name: Robert Allen

Date: 3/27/2018

Site Electrician or Representative Signature:



Engineer Signature:



Toshiba International Corporation

Field Service Report

Daily Sheet

I. CUSTOMER AND EQUIPMENT INFORMATION

Task Number	21623	Service Engineer	Hoque, Nick
Customer	ADE Systems Inc.		
End User	Columbia university		
Work Site	410 West 118th Street, New York, NY. 10027		
Site Address			
Contact	Sean Mcloskey	Contact Phone	516 300 2872
Application			
Description			

II. TIME LOG

Date	Day	Start Time	Stop Time	Hours	Work Type	Notes
3/28/2018	Wednesday	7:00 AM	7:30 AM	.50	Travel	
		7:30 AM	6:30 PM	11.00	Work	
		6:30 PM	7:00 PM	.50	Travel	
Total Hours				12.00	Standby: Travel: Work: Overtime: Yes	Initials: RA

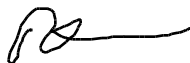
III. NOTES

Completed P.M on Chiller #7 and chiller # 5 and tested

Site Electrician or Representative Print Name: Robert Allen

Date: 3/28/2018

Site Electrician or Representative Signature:



Engineer Signature:



TOSHIBA
Field Service
Pride & Professionalism

Toshiba International Corporation

Field Service Report

Daily Sheet

I. CUSTOMER AND EQUIPMENT INFORMATION

Task Number	21623	Service Engineer	Hoque, Nick
Customer	ADE Systems Inc.		
End User	Columbia university		
Work Site	410 West 118th Street, New York, NY. 10027		
Site Address			
Contact	Sean Mcloskey	Contact Phone	516 300 2872
Application			
Description			

II. TIME LOG

Date	Day	Start Time	Stop Time	Hours	Work Type	Notes
3/29/2018	Thursday	7:00 AM	7:30 AM	.50	Travel	
		7:30 AM	7:00 PM	11.30	Work	
		7:00 PM	7:30 PM	.50	Travel	
Total Hours				12.50	Standby: Travel: Work: Overtime: Yes	Initials: RA

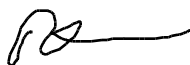
III. NOTES

Completed P.M on Chiller #5 and chiller # 4 and tested

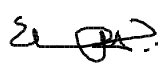
Site Electrician or Representative Print Name: Robert Allen

Date: 3/29/2018

Site Electrician or Representative Signature:



Engineer Signature:



Toshiba International Corporation

Field Service Report

Daily Sheet

I. CUSTOMER AND EQUIPMENT INFORMATION

Task Number	21623	Service Engineer	Hoque, Nick
Customer	ADE Systems Inc.		
End User	Columbia university		
Work Site	410 West 118th Street, New York, NY. 10027		
Site Address			
Contact	Sean Mcloskey	Contact Phone	516 300 2872
Application			
Description			

II. TIME LOG

Date	Day	Start Time	Stop Time	Hours	Work Type	Notes
3/30/2018	Friday	7:00 AM	7:30 AM	.50	Travel	
		7:30 AM	3:30 PM	8.00	Work	
		3:30 PM	4:00 PM	.50	Travel	
Total Hours				9.0	Standby: Travel: Work: Overtime: Yes	Initials: RA

III. NOTES

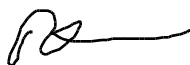
Completed P.M on CHWP #7 and working on isolation switch on chiller #6 at Customer request due to not closing properly

Site Electrician or Representative Print Name: Robert Allen

Date: 3/30/2018

Site Electrician or Representative Signature:

Engineer Signature:




Toshiba International Corporation

Field Service Report

Daily Sheet

I. CUSTOMER AND EQUIPMENT INFORMATION

Task Number	21623	Service Engineer	Hoque, Nick
Customer	ADE Systems Inc.		
End User	Columbia university		
Work Site	410 West 118th Street, New York, NY. 10027		
Site Address			
Contact	Sean Mcloskey	Contact Phone	516 300 2872
Application			
Description			

II. TIME LOG

Date	Day	Start Time	Stop Time	Hours	Work Type	Notes
3/31/2018	Saturday	7:00 AM	7:30 PM	.50	Travel	
		7:30 AM	3:30 PM	8.00	Work	
		3:30 PM	4:00 PM	.50	Travel	
Total Hours				9.0	Standby: Travel: Work: Overtime: Yes	Initials: RA

III. NOTES

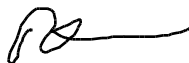
Completed P.M on Chiller # 6 and repaired the isolation switch and rectifier standoff and tested.

Site Electrician or Representative Print Name: Robert Allen

Date: 3/31/2018

Site Electrician or Representative Signature:

Engineer Signature:




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Pride & Professionalism

Toshiba International Corporation

Field Service Report

Daily Sheet

I. CUSTOMER AND EQUIPMENT INFORMATION

Task Number	21623	Service Engineer	Hoque, Nick
Customer	ADE Systems Inc.		
End User	Columbia university		
Work Site	410 West 118th Street, New York, NY. 10027		
Site Address			
Contact	Sean Mcloskey	Contact Phone	516 300 2872
Application			
Description			

II. TIME LOG

Date	Day	Start Time	Stop Time	Hours	Work Type	Notes
4/1/2018	Sunday	7:30 AM	5:30 PM	10.00	Travel	
Total Hours				10.00	Standby: Travel: Work: Overtime: Yes	Initials: RA

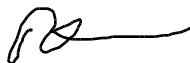
III. NOTES

Travelled from New York,NY. to Katy,Texas

Site Electrician or Representative Print Name: Robert Allen

Date: 4/1/2018

Site Electrician or Representative Signature:



Engineer Signature:



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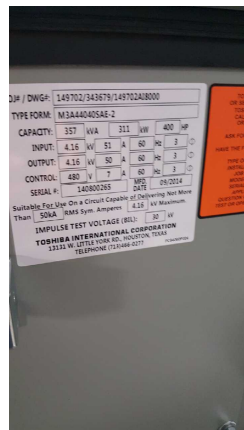
Field Service Report

Daily Engineer's Notes

Task Number	21623	Service Engineer	Hoque, Nick	Date	3/27/2018
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After JHA and logout started with First PM on Chiller #4 and after done with PM, Customer tested with their control with load.

Move on to Chiller #7 and started P.M on that VFD, could not finish the same day and back to hotel.



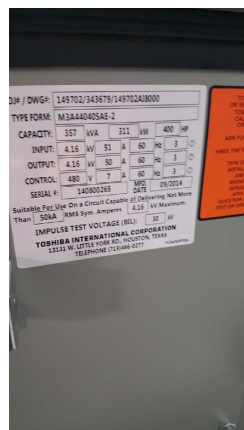
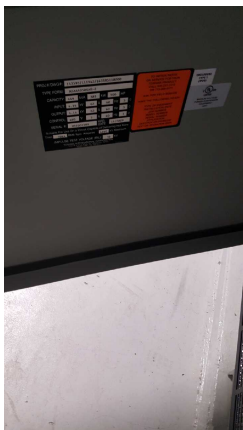
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Field Service Report

Daily Engineer's Notes

Task Number	21623	Service Engineer	Hoque, Nick	Date	3/28/2018
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After JHA and logout Completed PM on Chiller # CWP #7 and Customer tested with their control with load. Move on to Chiller CHWP# 4 and started P.M on that VFD. Test data are attached with separate file.



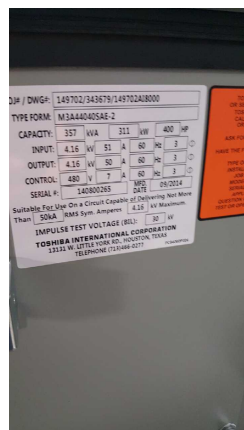
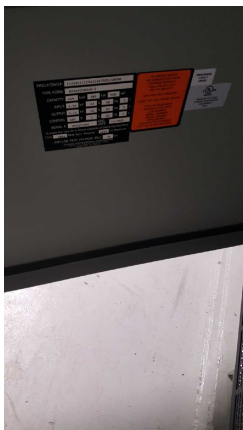
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Field Service Report

Daily Engineer's Notes

Task Number	21623	Service Engineer	Hoque, Nick	Date	3/29/2018
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After JHA and logout Completed PM on Chiller # CWP #5 and Customer tested VFD with their control on load. Move on to Chiller CHWP# 5 and started P.M on that VFD. Test data are attached with separate file.



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Field Service Report

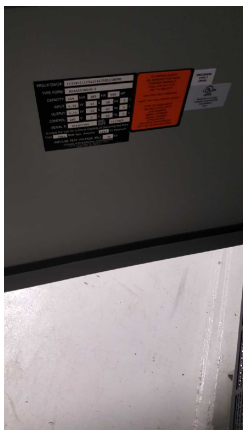
Daily Engineer's Notes

Task Number	21623	Service Engineer	Hoque, Nick	Date	3/30/2018
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After JHA and logout Completed PM on Chiller # CWP # 5 and after done with PM , Customer tested with their control with load.

Move on to Chiller CWP# 6 and started P.M on that VFD and customer told me they couldn't open the isolation switch on that VFD and I need to fix it , whenever I go through with PM. During PM on same VFD I also found broken Stand off on U phase rectifier section.

I ordered the parts from Houston and move to CHWP#7 and finished PM on that VFD and also tested with load from customer control.



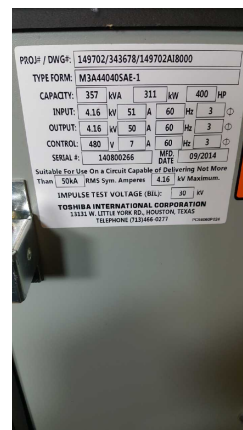
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Field Service Report

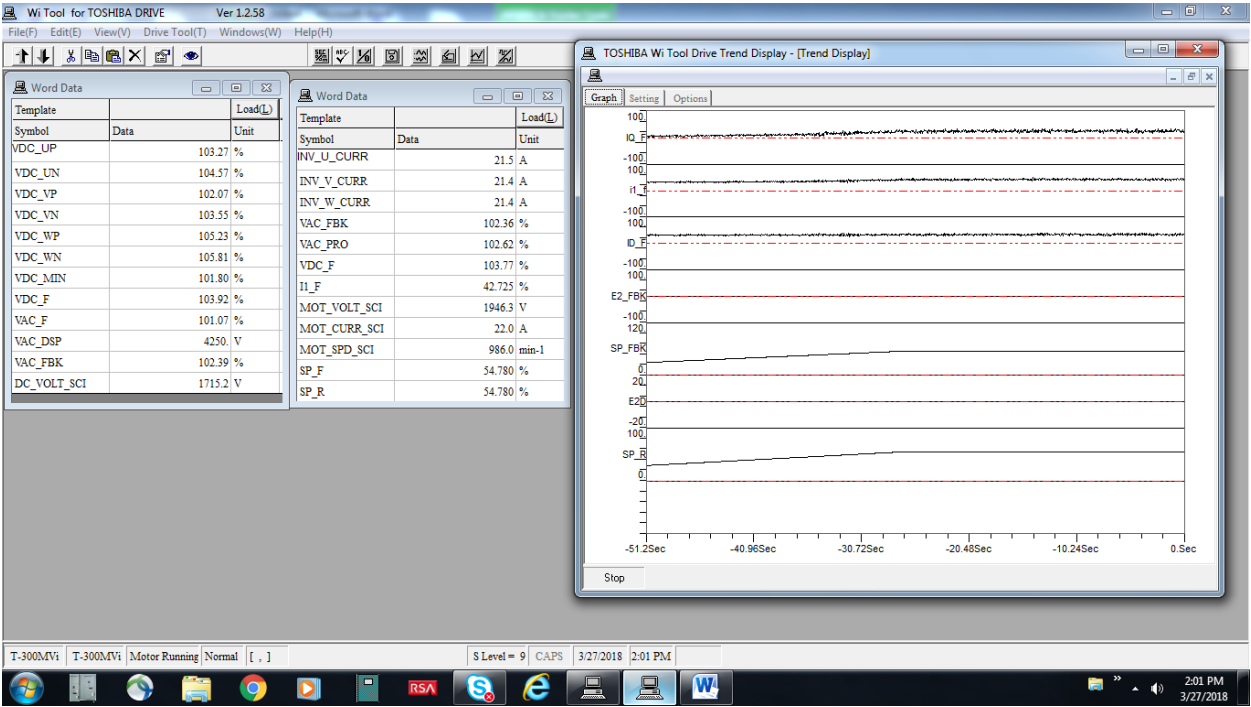
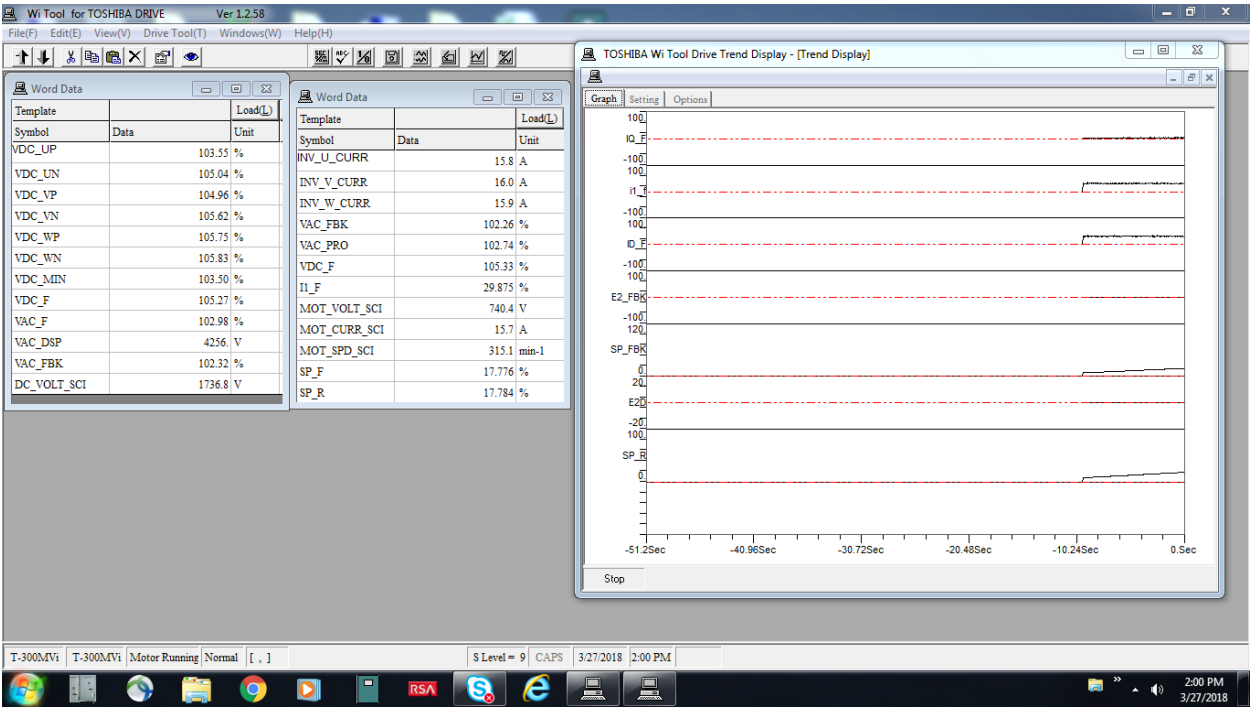
Daily Engineer's Notes

Task Number	21623	Service Engineer	Hoque, Nick	Date	3/31/2018
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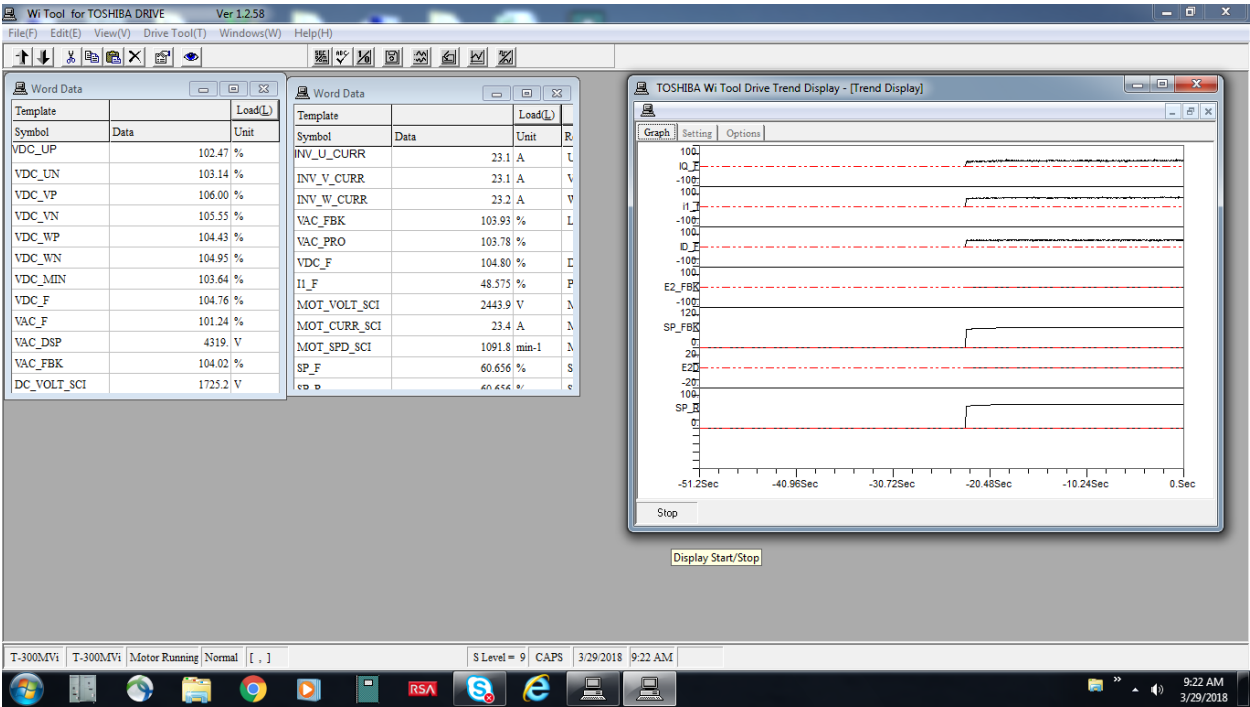
After JHA and logout started working on Chiller #6 and replace the rectifier fuse holder after received the parts from Houston and repair the isolation switch. Tested the Chiller with load from customer control.



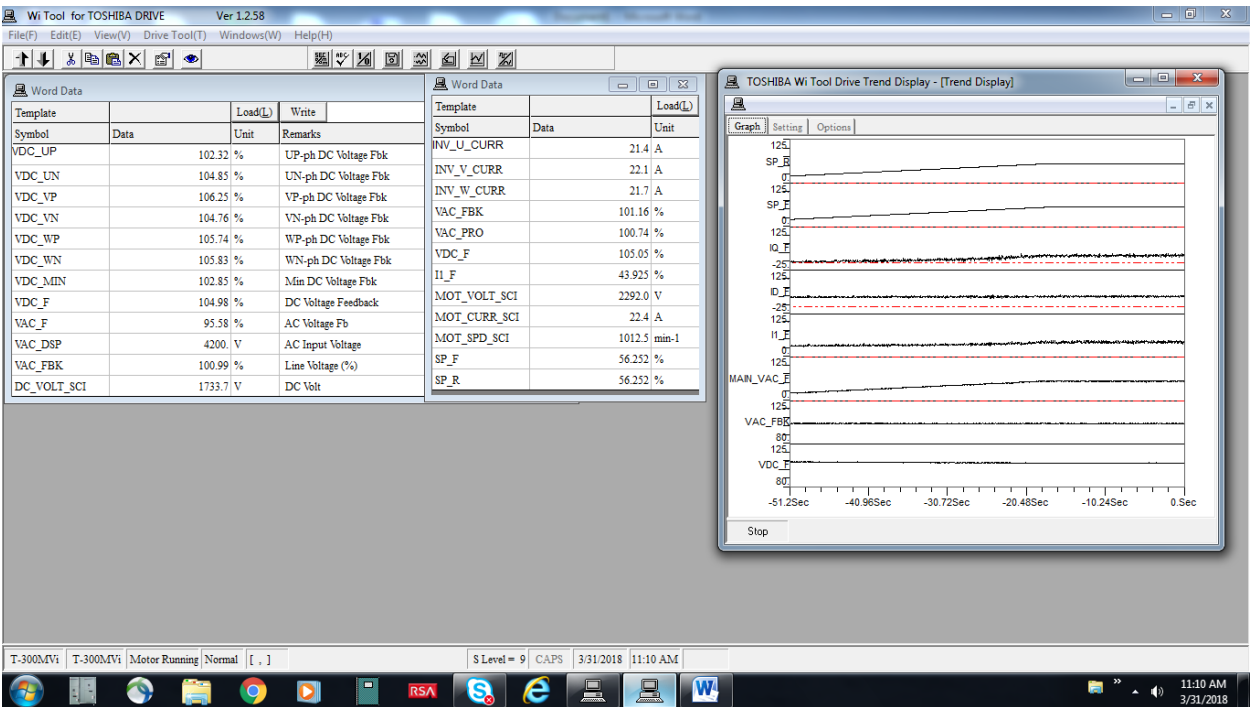
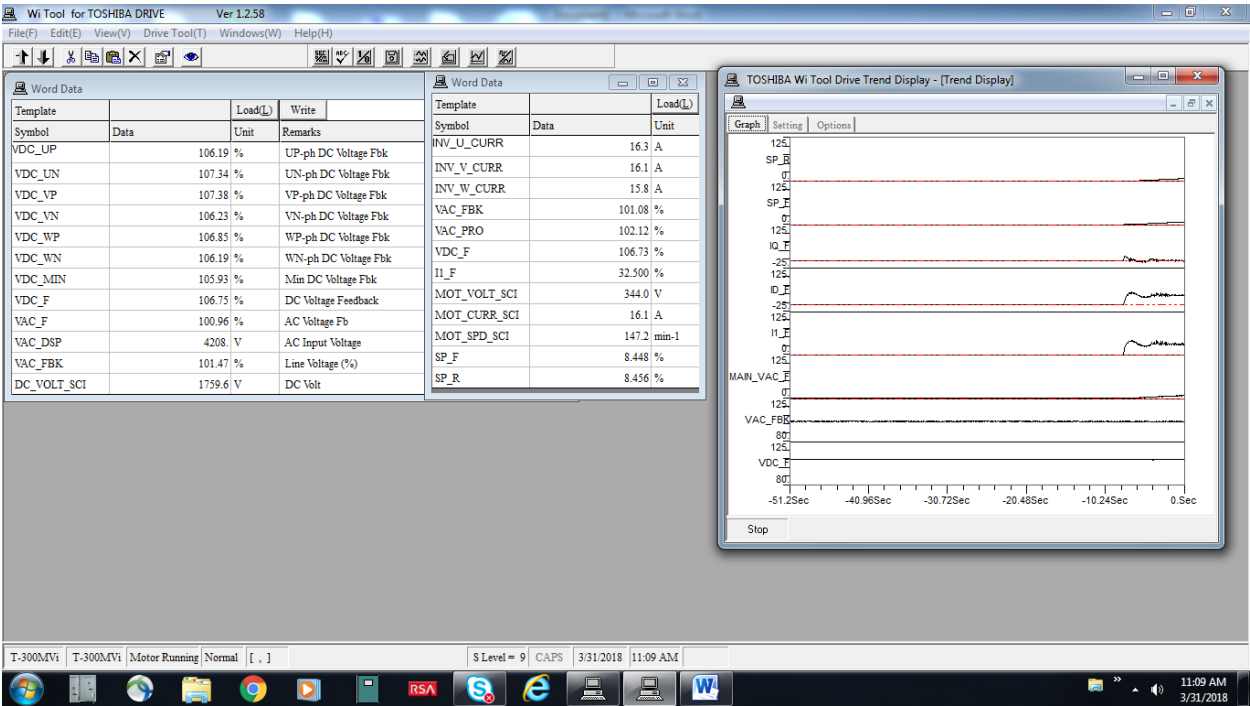
Test after P.M Chiller#4



CWP#5 TEST AFTER P.M



Chiller#6 test after the P.M



CWP#7 Test after P.M

