Multistage Blower - Variable Frequency Drive Control

Description

The sLOC-MC™ for VFD is designed for users looking for variable frequency drive control and to protect and monitor the full health of their multistage blower installation. This control package i s fully configurable to fit your application and has additional available features such as remote monitoring and control capability, ethernet or hardwired connectivity, and a 10" touch screen interface.

Lone Star Blower and Compressor has developed state of the art surge prediction and detection algorithms which are included with every sLOC-MC™ local control panel. Combined with active surge avoidance techniques, these added protections surpass what is offered by other market participants and ensure maximum reliability and system up-time.

Control Methods

Primary: Variable Frequency Drive Speed Control
Auxiliary: Actuated Blow-Off Valve or Recirculation Valve

Control Modes

Speed, Capacity %, Discharge Pressure, Inlet Pressure / Vacuum, Other Process Variable

Available Protections & Functionality

Active Surge Avoidance
Surge Prediction & Detection
Complete Blower Monitoring from Any Instrument
Blow-Off / Recirculation Valve Control

Documentation, Testing & Startup Services

Operation Manuals
System Integration Support Documents
Factory Acceptance Testing (witnessed available)
Installation Support
Commissioning & Training

Standard Panel Specifications*

*Customization may affect the standard listed specifications

Approvals .... UL / ULC 508A
Warranty .... Lifetime Warranty with Standard Hardware
Enclosure Size .... 30H x 24W x 10D
Enclosure Rating .... TYPE 4
HMI .... 10" Phoenix Contact WP 6101-WXPS

PLC

Model .... Phoenix Contact PLCnext AXC F 2152
Programming Software ... PLCnext Engineer (Free Software)
CPU .... Arm® Cortex® A9 2x 800 MHz
Internal Memory 512MB
Expansion Memory .... SD Card - 2GB
Communications .... ProfiNet, EtherNet/IP, Modbus TCP, MQTT, OPC UA (more options available)
Ethernet Connections x2 RJ45
Operating Temperature ... -25°C to 60°C

Standard I/O

Discrete Inputs x16
Discrete Outputs x16
Analog Inputs x16
Analog Oututs x4
RTD Inputs x8

Other Product Features

E-Stop & Status Light
High-Resolution Analogs
LED Fuse Blocks
120V Convenience Outlet
Electrical Surge Protection
Isolated Instrument Ground

Available Options

Alternate PLC Brand (Allen Bradley, Siemens, or Schneider
Alternate HMI Brand (Allen Bradley, Siemens, or Schneider)
Type 4X or Type 12 Enclosure
Freestanding Enclosure
Hinged HMI Cover
Interior Light
Alarm Beacon or Siren
Pilot Devices - Push Buttons, Switches, or Indicator Lights
Ethernet Switch - Managed or Unmanaged
Cooling - Fans, Vortex Cooler or Panel Mount A/C
Panel Heater
Purge Systems
Other Approval Ratings
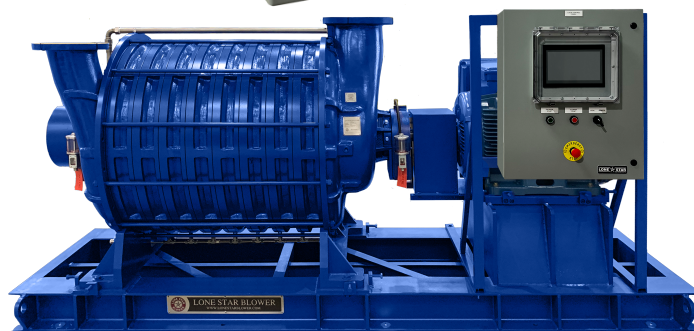
RECOMMENDED CONTROL PANEL

sLOC-MC-ADVANCED
- 30x24x10 ENCLOSURE
- PLCnext AXC F 2152 PLC
- 10" TOUCHSCREEN HMI
- ETHERNET COMMUNICATIONS
- x16 DISCRETE INPUTS
- x16 DISCRETE OUTPUTS
- x16 ANALOG INPUTS
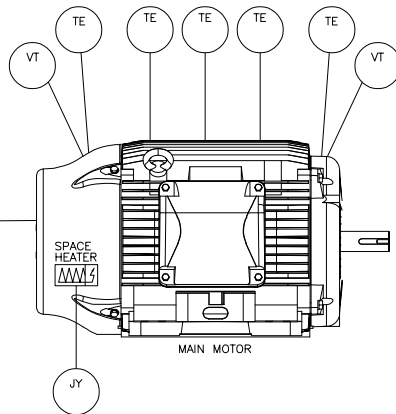- X4 ANALOG OUTPUTS
- x8 RTD INPUTS
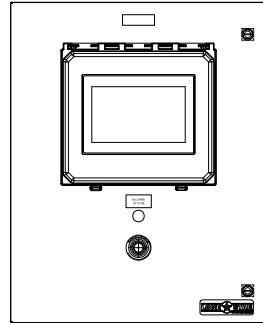
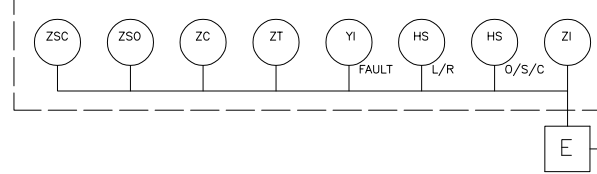TYPICAL OF ALL ELECTRIC ACTUATORS SHOWN

(ZSC) (ZSO) (ZC) (ZT) (YI)FAULT (HS)L/R (HS)O/S/C (ZI)

TO PROCESS

E

DISCHARGE ISOLATION VALVE

CHECK VALVE

PROCESS

PT
TT

PT
TT

ETHERNET COMM.
PROCESS INPUT VARIABLE

RUN COMMAND
RUN FEEDBACK
FAULT INDICATION
SPEED COMMAND
SPEED INDICATION
MOTOR AMPS

VFD

FLEXIBLE CONNECTION

FLEXIBLE CONNECTION

(TE) (TE) (TE) (TE) (TE)
(VT)   (VT)

(TT)

(VT)

(TT)
(VT)

SPACE HEATER

MAIN MOTOR

(JY)
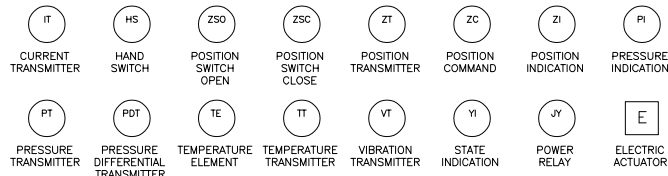
COUPLING

BLOWER

NOTES:
1) COMMON INSTRUMENTS SHOWN. INSTRUMENTS CAN BE CHANGED TO SUIT APPLICATION.
2) CONTROL PANEL WILL INTERFACE WITH VFD FOR START/STOP/SPEED CONTROL.

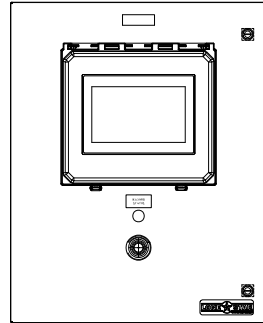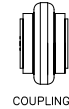|							
(IT) CURRENT TRANSMITTER	(HS) HAND SWITCH	(ZSO) POSITION SWITCH OPEN	(ZSC) POSITION SWITCH CLOSE	(ZT) POSITION TRANSMITTER	(ZC) POSITION COMMAND	(ZI) POSITION INDICATION	(PI) PRESSURE INDICATION
(PT) PRESSURE TRANSMITTER	(PDT) PRESSURE DIFFERENTIAL TRANSMITTER	(TE) TEMPERATURE ELEMENT	(TT) TEMPERATURE TRANSMITTER	(VT) VIBRATION TRANSMITTER	(YI) STATE INDICATION	(JY) POWER RELAY	E ELECTRIC ACTUATOR

LONE STAR BLOWER

TITLE
MSCB   P&ID
VFD CONTROL

SHEET 1 OF 1   REV 1

TYPICAL OF ALL ELECTRIC ACTUATORS SHOWN

ZSC	ZSO	ZC	ZT	YI	HS	HS	ZI
				FAULT	L/R	O/S/C	

TO PROCESS

E

DISCHARGE ISOLATION VALVE

PROCESS

M

E

CHECK VALVE

FLEXIBLE CONNECTION

HEAT EXCHANGER REF. NOTE 3

RECIRCULATION CONTROL VALVE

PT

TT

PT

TT
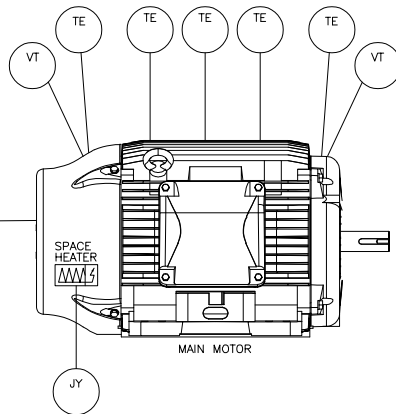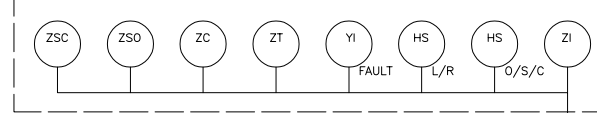
ETHERNET COMM.

PROCESS INPUT VARIABLE

RUN COMMAND
RUN FEEDBACK
FAULT INDICATION
SPEED COMMAND
SPEED INDICATION
MOTOR AMPS

VFD

TE TE TE TE TE

VT   VT

FLEXIBLE CONNECTION

FLEXIBLE CONNECTION

SPACE HEATER

MAIN MOTOR

JY

COUPLING

TT

VT

TT

VT

BLOWER

IT — CURRENT TRANSMITTER
HS — HAND SWITCH
ZSO — POSITION SWITCH OPEN
ZSC — POSITION SWITCH CLOSE
ZT — POSITION TRANSMITTER
ZC — POSITION COMMAND
ZI — POSITION INDICATION
PI — PRESSURE INDICATION
PT — PRESSURE TRANSMITTER
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VT — VIBRATION TRANSMITTER
YI — STATE INDICATION
JY — POWER RELAY
E — ELECTRIC ACTUATOR

NOTES:
1) COMMON INSTRUMENTS SHOWN. INSTRUMENTS CAN BE CHANGED TO SUIT APPLICATION.
2) CONTROL PANEL WILL INTERFACE WITH VFD FOR START/STOP/SPEED CONTROL.
3) AIR COOLED HEAT EXCHANGER SHOWN, CAN ALSO CONFIGURE FOR LIQUID COOLED HEAT EXCHANGER.

LONE STAR BLOWER

TITLE

MSCB P&ID
VFD CONTROL W/RECIRCULATION

SHEET 1 OF 1   REV 1