

## SYSTEM DESCRIPTION / SEQUENCE OF OPERATION

### ANDERSON RYCROFT PROJECT # E02577

WO#15233/1-1

REV. 1

DATE: 01-07-13

#### 1) SYSTEM DESCRIPTION

The system consists of three 400KW, 480V, 3 phase, 3 wire, generators and a four section generator control switchboard.

Cubicle #1 contains the synchronizing and common controls. PLC is provided for automatic synchronizing control and for starting additional units as required in the event of generator failure. Manual synchronizing is also provided to operate as a backup in the event that the automatic synchronizing controls fail. The bottom section contains the Loadbank breaker and the distribution transformer breaker.

Cubicle #2 to 4 contains the individual controls for the natural gas generator units. Each generator control, contains the metering, protective devices, load sharing and speed controller, automatic voltage regulator, electrically operated breaker and the MEC 20 engine controller.

#### 2) SEQUENCE OF OPERATION

The control panel is designed to normally operate one or two of the units on line, as "prime" units, while the remaining unit will be in auto standby mode. Should any one of the prime units fail, the standby unit will automatically start and synchronize to the bus. If all units are switched to standby all three generator will start and the standby start light will be on. The design permits the operation of any one unit, any combination of two units or all three units.

For the system to operate automatically all MEC 20 engine controller switches must be in "Auto" and all breaker mode selectors must be in "Auto". Normally at least one unit will running in "prime" with the others selected for "standby".

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#### MEC 20 Engine Controller Switch

This switch has the following functions:

- |                  |   |                                                                                                                                                                                                                                                                                                              |
|------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RUN</b>       | - | The generator starts and runs off-line (unloaded) and is available if required by the system.                                                                                                                                                                                                                |
| <b>OFF</b>       | - | The generator is off. This switch must be in OFF position to reset shutdowns on the MEC.                                                                                                                                                                                                                     |
| <b>AUTO</b>      | - | When selected, starting and stopping of the engine will be controlled by the prime/standby selector. If a cooldown time has been set, the engine will continue to run unloaded for a cooldown period when the unit is signaled to stop. Depressing the MEC 20 "OFF" switch will stop the engine immediately. |
| <b>LOAD TEST</b> | - | This function is not used; it is equivalent to AUTO position.                                                                                                                                                                                                                                                |

#### Operation Mode Selector (43CS)

- |                   |   |                                                                                                                                                                                                                  |
|-------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>OFF</b>        | - | The engine will not start automatically. Switching to off when the engine is running, goes into cooldown.<br><b>Note:</b> The engine may still be manually started via the engine controller switch (i.e.. RUN). |
| <b>STANDBY</b>    | - | The unit will automatically start on any prime unit failure.                                                                                                                                                     |
| <b>PRIME/SYNC</b> | - | When selected, the unit will start and operate continuously unloaded (52AM in Manual) or go on line alone/parallel with the other unit(s) (52AM in Auto).                                                        |

**Note:** Should the prime unit fail, the Operation Mode Selector must be changed to make the standby generator the prime unit before clearing the shutdown condition and clearing the standby start illuminated pushbutton.

Failure to do this will cause the standby generator's breaker to trip, de-energizing the load bus and initiating a dead bus standby start.

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REV. 1

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#### Breaker Mode Selector (52AM)

- AUTO** - The breaker will be automatically controlled by the auto mode logic and will close when called for by the synchronizer.
- MANUAL** - The operator manually controls the breaker via the breaker close switch (52CS)
- The breaker may be closed onto a live bus via the sync permit contact when the generator is selected for manual synchronizing.

**NOTE:** As a precaution, the operator should only activate the breaker control switch, on a live bus, when the synchroscope is at the 12 o'clock position and the sync lights are dim or out.

#### Breaker Control Switch [52CS]

- Trip** - Manually trips the breaker when 52AM is in manual.
- Close** - Manually closes the breaker when 52AM is in manual.

#### Voltage Adjust Switch (90RL)

- RAISE** - Manually raises the voltage of the generator.
- LOWER** - Manually lowers the voltage of the generator.

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REV. 1

DATE: 01-07-13

#### Manual Sync Selector Switch (25SS)

- OFF - Manual synchronizing is inhibited. Auto synchronizing is possible.
- GEN #1 - Connects the synchroscope, sync lights between Generator #1 and the bus.
- GEN #2 - Refer to Gen #1 position.
- GEN #3 - Refer to Gen #1 position.

**NOTE:** The manual sync selector switch may be used to view the automatic synchronizing of a generator.

#### Manual Synchronizing

The generators may be manually synchronized together as per the following procedure:

- With the generator running,
  - Enable the manual synchronizing system, by turning the sync selector to the incoming unit's number (GEN 1, 2 or 3).
  - Match speed of the incoming unit to that of the on load unit(s) with the speed adjust rheostat.
  - Once the speed is matched and the voltage is within 5% of each other, the unit can be connected to the load by selecting "Close" on the breaker control switch when the synchroscope is at 12 o'clock position and the sync lights are dim or out.
  - **NOTE:** protection from improper synchronizing is provided via a sync check relay.
  - Once the incoming unit's breaker is closed, its speed should be finely adjusted for matching loads on each unit.
- At this stage, the units are paralleled and may be run in parallel indefinitely.
- Return the sync selector back to the "off" position.

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REV. 1

DATE: 01-07-13

#### Changing Prime Units

Breaker Mode Switch - AUTO

The control system provides bumpless transfer when changing prime units. With one unit running in prime and the other unit in the standby mode; switch the standby unit to prime/sync. The unit will automatically start and sync onto the bus. When the two units are running in parallel, switch the prime unit to standby, its breaker will open taking it off line and it will continue to run unloaded for the cooldown period.

#### Prime Unit Fail /Dead Bus Standby Start

Breaker Mode Switch - AUTO

With one unit running in prime and the other units in the standby mode; if the prime unit fails, its breaker will open leaving the bus dead (de-energized). The standby start light illuminates and the standby units automatically start. The first unit to come up to voltage and frequency will close its breaker on to the dead bus. The next unit will automatically synchronize with the on-line unit and when synchronized its breaker will close to parallel to the load bus.

If 2 units are selected as prime and one of the prime units fails, the unit that is in standby will start and synchronize to the bus.

**NOTE:** If the failed prime unit is switched to standby and reset standby start, the running standby unit will open its breaker and stop [i.e. 2 units are no longer required, therefore one unit will stop].

To reset the standby start condition, first switch the standby unit(s) to prime, then press the standby start illuminated pushbutton.

**NOTE:** Failure to do so will result in all breakers opening then close again and the standby start light will be illuminated once again.

#### Load Shed Control

The load shed contact will actuate in the event of a bus overload condition. This is detected by an under frequency sensor (set @ 57Hz). The contact will reset after the bus frequency recovers, the light will remain illuminated until reset by an operator.



**MEC20**  
**MICROPROCESSOR ENGINE/GENERATOR CONTROLLER**  
**SUMMARY CONFIGURATION DATA SHEET**

WORK ORDER #: 15233-01-01-

REV.: 2

REV. DATE: 01/08/29

INITIATED BY: RLR

CUSTOMER: Enerflex Power Systems Compress

DEFAULT PROGRAM: P1

DATE: 01/05/17

PROJECT NAME: Anderson Rycroft Project

TPS VER: D

NOTES: Gen1. to Gen3.

**ENGINE/GEN SYSTEM INPUTS**

SYSTEM AC VOLTS: 480

PHASES: 3

FREQUENCY: 60

DC VOLTAGE: 24

**DIGITAL DISPLAY FEATURES**

|                                                        |         |                                                  |         |                                                     |                                                |
|--------------------------------------------------------|---------|--------------------------------------------------|---------|-----------------------------------------------------|------------------------------------------------|
| <input checked="" type="checkbox"/> AC VOLTAGE         | Enabled | <input checked="" type="checkbox"/> AC CURRENT   | Enabled | <input checked="" type="checkbox"/> FREQUENCY       | <input checked="" type="checkbox"/> TACHOMETER |
| <input checked="" type="checkbox"/> ENGINE TEMPERATURE | Enabled | <input checked="" type="checkbox"/> OIL PRESSURE | Enabled | <input checked="" type="checkbox"/> BATTERY VOLTAGE | <input checked="" type="checkbox"/> HOURMETER  |

**STANDARD FAULT CIRCUITS (15)**

| FAULT NAME                    | INPUT TYPE                |
|-------------------------------|---------------------------|
| Overcrank Shutdown            | Internal                  |
| Loss of Speed Signal Shutdown | Internal                  |
| Overspeed Shutdown            | Internal                  |
| Switch Not in Auto Alarm      | Internal                  |
| Low Battery Voltage Alarm     | Analog (DC Volts)         |
| High Battery Voltage Alarm    | Analog (DC Volts)         |
| Weak Battery Alarm            | Analog (DC Volts)         |
| Low Engine Temp. Alarm        | Analog (Temp. Sender)     |
| High Engine Temp. Alarm       | Analog (Temp. Sender)     |
| Low Oil Pressure Alarm        | Analog (Press. Sender)    |
| Emergency Stop                | Internal/External         |
| Low Oil Pressure Shutdown     | External Digital Input #1 |
| High Engine Temp Shutdown     | External Digital Input #2 |
| Low Oil Level Shutdown        | External Digital Input #3 |
| *HiIntakeManTemp Shutdown     | External Digital Input #4 |

**OPTIONAL ANALOG FAULT CIRCUITS**

| FAULT NAME            | INPUT TYPE          |
|-----------------------|---------------------|
| Undervoltage Shutdown | Analog (AC Voltage) |
| Overvoltage Shutdown  | Analog (AC Voltage) |
| Under Frequency Alarm | Analog (AC Freq)    |
| Over Frequency Alarm  | Analog (AC Freq)    |

**STANDARD OUTPUT CONTACTS (4)**

| OUTPUT NAME | OUTPUT TYPE              |
|-------------|--------------------------|
| Run         | Form A                   |
| Crank       | Form A                   |
| Common Fail | Form C                   |
| Not in auto | Programmable #1 - Form C |

**OPTIONAL PROGRAMMABLE CONTACTS (up to 3)**

| OUTPUT NAME | OUTPUT TYPE              |
|-------------|--------------------------|
| Common fail | Programmable #2 - Form C |
| Lube        | Programmable #3 - Form C |
| Running     | Programmable #4 - Form C |

**OPTIONAL DIGITAL FAULT CIRCUITS (up to 8)**

| FAULT NAME               | INPUT TYPE                 |
|--------------------------|----------------------------|
| *Detonation Shutdown     | External Digital Input #5  |
| High Oil Temp Shutdown   | External Digital Input #6  |
| High Engine Vib Shutdown | External Digital Input #7  |
| High Cooler Vib Shutdown | External Digital Input #8  |
| *LowJktWtrLevel Shutdown | External Digital Input #9  |
| Reverse Power Shutdown   | External Digital Input #10 |
| Breaker Tripped Shutdown | External Digital Input #11 |
| *Expansion Alarm         | External Digital Input #12 |

\* indicates custom digital fault

**OTHER OPTIONAL FEATURES**

Cycle Lube



## Main Menu Program

**MEC20**

Software ver. 1.5

WORK ORDER: 15233-01-01-

REVISION #: 2

REVISION DATE: 01/08/29

START DATE: 01/05/17

START BY: RLR

DEFAULT PROGRAM: P1

TPS VERSION: D

CUSTOMER: Enerflex Power Systems Compression & Pow

PROJECT: Anderson Rycroft Project

PRODUCT: MEC20

|                              |             |                                     |                                     |
|------------------------------|-------------|-------------------------------------|-------------------------------------|
| Read only password:          | 1           | <input type="checkbox"/>            |                                     |
| Read/write password:         | 2           | <input type="checkbox"/>            |                                     |
| Master password:             | 3           | <input type="checkbox"/>            |                                     |
| Node Address:                | 4           | <input type="checkbox"/>            | 1-255                               |
| System Voltage:              | 480         | <input checked="" type="checkbox"/> | Line to line voltage 120-15000      |
| System Frequency:            | 60          | <input type="checkbox"/>            | Toggle between 50/60 Hz             |
| System Phases:               | 3           | <input type="checkbox"/>            | Toggle between 1 & 3 phase          |
| Voltage Sensing:             | 4           | <input checked="" type="checkbox"/> | Voltage sensing PT ratio 1-203      |
| Current Sensing:             | 160         | <input checked="" type="checkbox"/> | Current sensing CT ratio 1-999      |
| Temperature Scale:           | F           | <input type="checkbox"/>            | Toggle between Deg C/Deg F          |
| Pressure Scale:              | PSI         | <input type="checkbox"/>            | Toggle between PSI/KPA              |
| Start Delay:                 | 20          | <input type="checkbox"/>            | 0-999 seconds                       |
| Crank Time:                  | 15          | <input type="checkbox"/>            | 0-99 seconds                        |
| Rest Time:                   | 15          | <input type="checkbox"/>            | 0-99 seconds                        |
| Starter Re-Engage:           | 3           | <input type="checkbox"/>            | 1-99 seconds 0=disabled             |
| Number of Cranks:            | 3           | <input type="checkbox"/>            | 1-99 times 0=continuous             |
| Bypass Delay:                | 10          | <input type="checkbox"/>            | 0-99 seconds                        |
| Cooldown Delay:              | 5           | <input type="checkbox"/>            | 0-99 minutes                        |
| Nominal RPM:                 | 1800        | <input type="checkbox"/>            | 0-4000 RPM                          |
| Flywheel Teeth:              | 150         | <input type="checkbox"/>            | 0-999 teeth                         |
| Crank Disconnect:            | 30%         | <input type="checkbox"/>            | 0-100%                              |
| Overspeed:                   | 110%        | <input type="checkbox"/>            | 100-150%                            |
| Overspeed Transient:         | 1.0         | <input type="checkbox"/>            | 0.0-9.9 seconds                     |
| Run Output Failsafe:         | Yes         | <input type="checkbox"/>            | Toggle between Yes/No               |
| Option Yes / Option No:      | Yes         | <input type="checkbox"/>            | Toggle between Yes/No               |
| Loss of Speed:               | Shutdown    | <input type="checkbox"/>            | Toggle between Alarm/Shutdown       |
| Start Input Polarity:        | Close       | <input type="checkbox"/>            | Toggle between Open/Close           |
| Common Fail for not in Auto: | Yes         | <input type="checkbox"/>            | Toggle between Yes/No               |
| Programmable Output1:        | Not in auto | <input checked="" type="checkbox"/> | Choose from list                    |
| Programmable Output2:        | Common fail | <input checked="" type="checkbox"/> | Choose from list                    |
| Prog Output 2 Option:        | Yes         | <input checked="" type="checkbox"/> | Toggle between Yes/No               |
| Programmable Output3:        | Lube        | <input checked="" type="checkbox"/> | Choose from list                    |
| Prog Output 3 Option:        | Yes         | <input checked="" type="checkbox"/> | Toggle between Yes/No               |
| Programmable Output4:        | Running     | <input checked="" type="checkbox"/> | Choose from list                    |
| Prog Output 4 Option:        | Yes         | <input checked="" type="checkbox"/> | Toggle between Yes/No               |
| Programmable Output5:        | Disabled    | <input type="checkbox"/>            | Choose from list                    |
| Prog Output 5 Option:        | No          | <input type="checkbox"/>            | Toggle between Yes/No               |
| Programmable Output6:        | Disabled    | <input type="checkbox"/>            | Choose from list                    |
| Prog Output 6 Option:        | No          | <input type="checkbox"/>            | Toggle between Yes/No               |
| Auto Callout:                | Common Fail | <input type="checkbox"/>            | Toggle Common Alarm, Fail, Shutdown |
| Post Lube Duration:          | 5           | <input checked="" type="checkbox"/> | 0-999 minutes                       |
| Cycle Lube Interval:         | 60          | <input checked="" type="checkbox"/> | 1-9999 minutes                      |
| Cycle Lube Duration:         | 1           | <input checked="" type="checkbox"/> | 0-999 minutes                       |
| Cycle Lube Option:           | Yes         | <input checked="" type="checkbox"/> | Toggle between Yes/No               |
| Idle Control:                | No          | <input type="checkbox"/>            | Toggle between Yes/No               |
| Idle Control Option:         | No          | <input type="checkbox"/>            | Toggle between Yes/No               |



## Main Menu Program

**MEC20**

Software ver. 1.5

WORK ORDER: 15233-01-01-

REVISION #: 2

REVISION DATE: 01/08/29

START DATE: 01/05/17

START BY: RLR

DEFAULT PROGRAM: P1

TPS VERSION: D

CUSTOMER: Enerflex Power Systems Compression & Pow  
PROJECT: Anderson Rycroft Project  
PRODUCT: MEC20

|                        |         |                                     |                                 |
|------------------------|---------|-------------------------------------|---------------------------------|
| Remote Communication:  | No      | <input type="checkbox"/>            | Toggle between Yes/No           |
| Horn Duration:         | 60      | <input type="checkbox"/>            | 0-continuous                    |
| Display Menu:          | 999     | <input type="checkbox"/>            | 0-999 seconds                   |
| Back Lite Timeout:     | 999     | <input type="checkbox"/>            | 0-999 seconds                   |
| Voltage Metering:      | Enabled | <input checked="" type="checkbox"/> | Toggle between Enabled/Disabled |
| Current Metering:      | Enabled | <input checked="" type="checkbox"/> | Toggle between Enabled/Disabled |
| Engine Temp Metering:  | Enabled | <input checked="" type="checkbox"/> | Toggle between Enabled/Disabled |
| Oil Pressure Metering: | Enabled | <input checked="" type="checkbox"/> | Toggle between Enabled/Disabled |
| Reset Run Hours:       | No      | <input type="checkbox"/>            | Toggle between Yes/No           |

# MEC 20 PROGRAMMING SHEETS

## DIGITAL FAULTS

TPS VERSION: D  
 START DATE: 01/05/17  
 START BY: RLR  
 DEFAULT PROGRAM: P1

WORK ORDER: 15233-01-01-  
 REVISION #: 2  
 REVISION DATE: 01/08/29

CUSTOMER: Enerflex Power Systems Compression & Power  
 PROJECT: Anderson Rycroft Project  
 PRODUCT: MEC20

| FAULT NAME        | INPUT NUMBER | FAULT          | ACTION         | ALARM LATCH | SHUTDOWN REMOTE RESET | POLARITY   | BYPASS ON START | TRANSIENT DELAY |
|-------------------|--------------|----------------|----------------|-------------|-----------------------|------------|-----------------|-----------------|
|                   |              | ENABLE/DISABLE | SHUTDOWN/ALARM | YES/NO      | YES/NO                | OPEN/CLOSE | YES/NO          | (SEC)           |
| Low Oil Pressure  | 1            | Enable         | Shutdown       |             | No                    | Open       | Yes             | 0.5             |
| High Engine Temp  | 2            | Enable         | Shutdown       |             | No                    | Open       | Yes             | 1               |
| Low Oil Level     | 3            | Enable         | Shutdown       |             | No                    | Open       | No              | 1               |
| * HiIntakeManTemp | 4            | Enable         | Shutdown       |             | No                    | Open       | No              | 1               |
| * Detonation      | 5            | Enable         | Shutdown       |             | No                    | Open       | Yes             | 1               |
| High Oil Temp     | 6            | Enable         | Shutdown       |             | No                    | Open       | No              | 1               |
| High Engine Vib   | 7            | Enable         | Shutdown       |             | No                    | Open       | No              | 1               |
| High Cooler Vib   | 8            | Enable         | Shutdown       |             | No                    | Open       | No              | 1               |
| * LowJktWtrLevel  | 9            | Enable         | Shutdown       |             | No                    | Open       | No              | 1               |
| Reverse Power     | 10           | Enable         | Shutdown       |             | No                    | Open       | No              | 0.1             |
| Breaker Tripped   | 11           | Enable         | Shutdown       |             | No                    | Close      | No              | 0.1             |
| * Expansion       | 12           | Enable         | Alarm          | Yes         | No                    | Close      | No              | 0.5             |

\* Indicates custom digital fault

# MEC20 PROGRAMMING SHEETS

## ANALOG FAULTS

TPS VERSION: D  
 START DATE: 01/05/17  
 START BY: RLR  
 DEFAULT PROGRAM: P1

WORK ORDER: 15233-01-01-

CUSTOMER: Enerflex Power Systems Compression & Power

PROJECT: Anderson Rycroft Project

PRODUCT: MEC20

REVISION #: 2

REVISION DATE: 01/08/29

| FAULT NAME        | INPUT ANALOG TYPE | FAULT ENABLE/DISABLE                       | SETPOINT LEVEL (PICK-UP) | SETPOINT LEVEL (DROP-OUT) | UNITS | ACTION SHUTDOWN/ALARM | ALARM LATCH YES/NO | SHUTDOWN REMOTE RESET YES/NO | BYPASS ON START YES/NO | TRANSIENT DELAY (SEC) |
|-------------------|-------------------|--------------------------------------------|--------------------------|---------------------------|-------|-----------------------|--------------------|------------------------------|------------------------|-----------------------|
| Undervoltage      | AC Voltage        | Enable <input checked="" type="checkbox"/> | 432                      | 384                       | V     | Shutdown              |                    | No                           | Yes                    | 5                     |
| Overvoltage       | AC Voltage        | Enable <input checked="" type="checkbox"/> | 528                      | 518                       | V     | Shutdown              |                    | No                           | No                     | 2                     |
| Under Frequency   | AC Freq           | Enable <input type="checkbox"/>            | 57.0                     |                           | HZ    | Alarm                 | Yes                |                              | Yes                    | 5                     |
| Over Frequency    | AC Freq           | Enable <input type="checkbox"/>            | 63.0                     |                           | HZ    | Alarm                 | Yes                |                              | No                     | 2                     |
| Weak Battery      | DC Voltage        | Enable <input type="checkbox"/>            | 18.0                     |                           | V     | Alarm                 | Yes                |                              | No                     | 3                     |
| Low Battery Volt  | DC Voltage        | Enable <input type="checkbox"/>            | 25.6                     |                           | V     | Alarm                 | No                 |                              | No                     | 120                   |
| High Battery Volt | DC Voltage        | Enable <input type="checkbox"/>            | 30.4                     |                           | V     | Alarm                 | No                 |                              | No                     | 10                    |
| Low Engine Temp   | Temp Sender       | Enable <input type="checkbox"/>            | 70                       |                           | DEG F | Alarm                 | Yes                |                              | No                     | 5                     |
| High Eng Temp #1  | Temp Sender       | Enable <input type="checkbox"/>            | 190                      |                           | DEG F | Alarm                 | Yes                |                              | Yes                    | 2                     |
| Low Oil Press #1  | Press Sender      | Enable <input type="checkbox"/>            | 483                      |                           | KPA   | Alarm                 | Yes                |                              | Yes                    | 2                     |



## Calibration MEC20

Software ver. 1.5

CUSTOMER: Enerflex Power Systems Compression & Power  
PROJECT: Anderson Rycroft Project  
PRODUCT: MEC20

WORK ORDER: 15233-01-01-  
CONTROLLER S/N: 1238099-54389  
REVISION #: 2  
REVISION DATE: 01/08/29  
START DATE: 01/05/17  
START BY: RLR  
DEFAULT PROGRAM: P1  
TPS VERSION: D

### Calibration:

|                      |          |                                                                           |
|----------------------|----------|---------------------------------------------------------------------------|
| Calibrated By        | RD       |                                                                           |
| Calibrated Date      | 01/07/12 |                                                                           |
| Volts A-B Zero       | 127      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Volts A-B Span       | 186      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Volts B-C Zero       | 127      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Volts B-C Span       | 186      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Volts C-A Zero       | 127      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Volts C-A Span       | 186      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Current A Zero       | 121      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Current A Span       | 116      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Current B Zero       | 121      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Current B Span       | 123      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Current C Zero       | 121      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Current C Span       | 150      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Battery Voltage Span | 176      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Engine Temp Max      | 126      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Engine Temp Min      | 233      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Oil Pressure Max     | 138      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |
| Oil Pressure Min     | 150      | <input checked="" type="checkbox"/> 0 - 255 Calibration correction number |



# Calibration MEC20

Software ver. 1.5

CUSTOMER: Enerflex Power Systems Compression & Power  
PROJECT: Anderson Rycroft Project  
PRODUCT: MEC20

WORK ORDER: 15233-01-01-  
CONTROLLER S/N: 1213599-51754  
REVISION #: 2  
REVISION DATE: 01/08/29  
START DATE: 01/05/17  
START BY: RLR  
DEFAULT PROGRAM: P1  
TPS VERSION: D

## Calibration:

|                      |          |                                     |                                       |
|----------------------|----------|-------------------------------------|---------------------------------------|
| Calibrated By        | RD       |                                     |                                       |
| Calibrated Date      | 01/07/12 |                                     |                                       |
| Volts A-B Zero       | 127      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Volts A-B Span       | 186      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Volts B-C Zero       | 127      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Volts B-C Span       | 186      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Volts C-A Zero       | 127      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Volts C-A Span       | 181      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current A Zero       | 127      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current A Span       | 111      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current B Zero       | 127      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current B Span       | 121      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current C Zero       | 121      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current C Span       | 149      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Battery Voltage Span | 181      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Engine Temp Max      | 127      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Engine Temp Min      | 220      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Oil Pressure Max     | 138      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Oil Pressure Min     | 145      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |



## Calibration MEC20

Software ver. 1.5

CUSTOMER: Enerflex Power Systems Compression & Power  
PROJECT: Anderson Rycroft Project  
PRODUCT: MEC20

WORK ORDER: 15233-01-01-  
CONTROLLER S/N: 1238099-54394  
REVISION #: 2  
REVISION DATE: 01/08/29  
START DATE: 01/05/17  
START BY: RLR  
DEFAULT PROGRAM: P1  
TPS VERSION: D

### Calibration:

|                      |          |                                     |                                       |
|----------------------|----------|-------------------------------------|---------------------------------------|
| Calibrated By        | RD       |                                     |                                       |
| Calibrated Date      | 01/07/12 |                                     |                                       |
| Volts A-B Zero       | 127      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Volts A-B Span       | 175      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Volts B-C Zero       | 127      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Volts B-C Span       | 175      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Volts C-A Zero       | 127      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Volts C-A Span       | 183      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current A Zero       | 112      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current A Span       | 139      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current B Zero       | 112      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current B Span       | 118      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current C Zero       | 127      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Current C Span       | 175      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Battery Voltage Span | 175      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Engine Temp Max      | 126      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Engine Temp Min      | 220      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Oil Pressure Max     | 137      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |
| Oil Pressure Min     | 152      | <input checked="" type="checkbox"/> | 0 - 255 Calibration correction number |