



TORNATECH

Project: _____

Customer: _____

Engineer: _____

Pump Manufacturer: _____

Technical Data Submittal Document

Model HFD

Diesel Fire Pump Controller Built to EN12845



Contents:

Data Sheets

Dimensional Data

Wiring Schematics

Field Connections

Note: The drawings included in this package are for controllers covered under our standard offering. Actual AS BUILT drawings may differ from what is shown in this package.



August 2021



| | | |
|---|---|--|
| Standard & Certification | Built to EN12845 | |
| | CE Mark: Various EN, IEC & CEE directives and standards | |
| Enclosure | Protection Rating Standard: IP55 | |
| | Accessories • Bottom entry gland plate • Special tool ¼ turn locks | Paint Specifications • Red RAL3002 • Powder coating • Glossy textured finish |
| General | AC | 208V to 240V/1ph/50-60hz |
| | DC | 12VDC 24VDC |
| | Grounding system | • Negative |
| | Battery chargers | • Two independent fully automatic • 10A continuous charge • 500mA trickle charge |
| Disconnecting Means | <ul style="list-style-type: none"> Isolating switch: <ul style="list-style-type: none"> Door interlocked in the ON position | |
| Electrical Reading | <ul style="list-style-type: none"> Battery 1 & Battery 2 voltage Battery 1 & Battery 2 charging amperage | |
| Event Recorder | <ul style="list-style-type: none"> Event recording with date stamp Under regular maintained operation, events can be stored in memory for up to 5 years Data viewable on operator interface display screen Downloadable by USB port to external memory device | |
| Terminal to Connect Starting Devices | <ul style="list-style-type: none"> Provision to connect two (2) externally mounted pressure switches (by others) Provision to connect deluge valve start device | |
| Terminals to Connect Engine Monitoring Devices | <ul style="list-style-type: none"> Engine speed sensor Engine temperature sensor Engine oil pressure sensor | |
| Terminals to Connect Fuel Tank Monitoring Device | <ul style="list-style-type: none"> Low Fuel Level switch Fuel Tank Leak switch | |
| Engine Monitoring Gauges | Digitally represented on ViZiTouch operator interface: <ul style="list-style-type: none"> Oil pressure Temperature RPM | |
| Audible Alarm | 6" alarm bell - 95 dB | |
| Visual Indications | <ul style="list-style-type: none"> Battery and charger 1 & 2 voltage and amperage Crank cycle Engine running/stopped Engine RPM | <ul style="list-style-type: none"> Engine temperature Engine oil pressure Time and date Alarm message(s) |



| | | |
|---|---|--|
| Visual & Audible Alarms | Visual only | |
| | <ul style="list-style-type: none"> • Fuel Tank Leak • Low Fuel Level • Charger Failure 1-2 | |
| Visual & Audible Alarms | Visual and Audible | |
| | <ul style="list-style-type: none"> • Engine High Coolant Temperature • Engine Low Oil Pressure • Engine Fail to Start | <ul style="list-style-type: none"> • Engine Overspeed • Battery Failure 1-2 |
| Remote Alarm Contact | DPDT-8A-250V.AC | |
| | <ul style="list-style-type: none"> • Common controller trouble <ul style="list-style-type: none"> • Charger #1 & Charger #2 failure • DC failure • Engine run • Automatic mode bypass • Engine fail to start • Common engine trouble <ul style="list-style-type: none"> • High engine temperature • Battery #1 & battery #2 failure • Common pump room alarm <ul style="list-style-type: none"> • Low fuel level • Fuel tank leak • AC Failure • Overspeed • Low oil pressure | |
| ViZiTouch Light Operator Interface | <ul style="list-style-type: none"> • Embedded micro-computer with software PLC logic • 4.2" color touch screen (HMI technology) • Upgradable software • Multi-language | |
| Operation | Emergency Start | • Pushbutton behind lockable and breakable cover |
| | Automatic Start | • Start on pressure drop (pressure switch by others) • Start on deluge valve |
| | Manual Start | • Crank start pushbutton • Run test pushbutton • Emergency start pushbutton |
| | Crank Cycle | • 6 consecutive cycle attempts <ul style="list-style-type: none"> • 10s crank from battery 1 or 2 alternatively • 10s rest in between each crank attempt |
| | Stopping | • Manual with Stop pushbutton |
| | Timers | Field Adjustable & Visual Countdown |
| | Actuation | • Pressure • Non-Pressure |
| | Mode | Visual Indication |



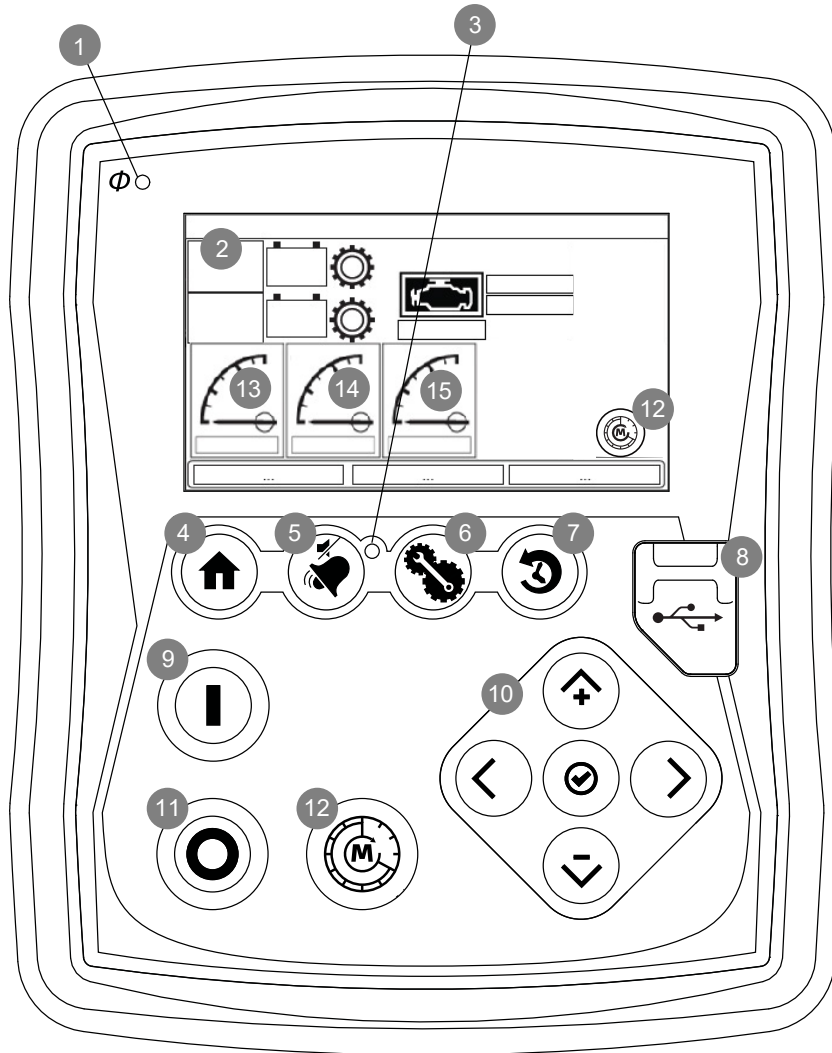
Options

| | |
|-----|--|
| B1 | Low fuel level alarm contact (Form C-SPDT) |
| C7 | Engine block heater circuit 3 Kw max |
| C13 | Louver activation circuit (battery power specific) |
| D7B | Low fuel level float 1-1/2" (supplied as separate item) |
| D9A | Anti-condensation heater & thermostat |
| D9B | Anti-condensation heater & humidistat |
| I02 | Gauge indication for fuel level |
| I03 | MANU-OFF-AUTO 3 pos key selector switch |
| I04 | AUTO-OFF 2 pos key selector switch |

| | |
|-----|--|
| L01 | Other language and English (bilingual) |
| L02 | French |
| L03 | Spanish |
| L04 | German |
| L05 | Italian |
| L06 | Polish |
| L07 | Romanian |
| L08 | Hungarian |
| L09 | Slovak |
| L10 | Croatian |
| L11 | Czech |
| L12 | Portuguese |
| L13 | Dutch |
| L14 | Russian |
| L15 | Turkish |
| L16 | Swedish |
| L17 | Bulgarian |
| L20 | Slovenian |

Note: Options chosen from this page are not electrically represented on the wiring schematics in this submittal package.

ViZiTouch Light Operator Interface



- | | |
|-------------------------------|--------------------------------|
| 1 - Power on LED | 8 - USB port |
| 2 - Color touch screen | 9 - START button |
| 3 - Alarm LED | 10 - Contextual navigation pad |
| 4 - HOME page button | 11 - STOP button |
| 5 - ALARM page button | 12 - RUN TEST button |
| 6 - CONFIGURATION page button | 13 - Engine speed |
| 7 - HISTORY page button | 14 - Coolant Temperature |
| | 15 - Oil pressure |

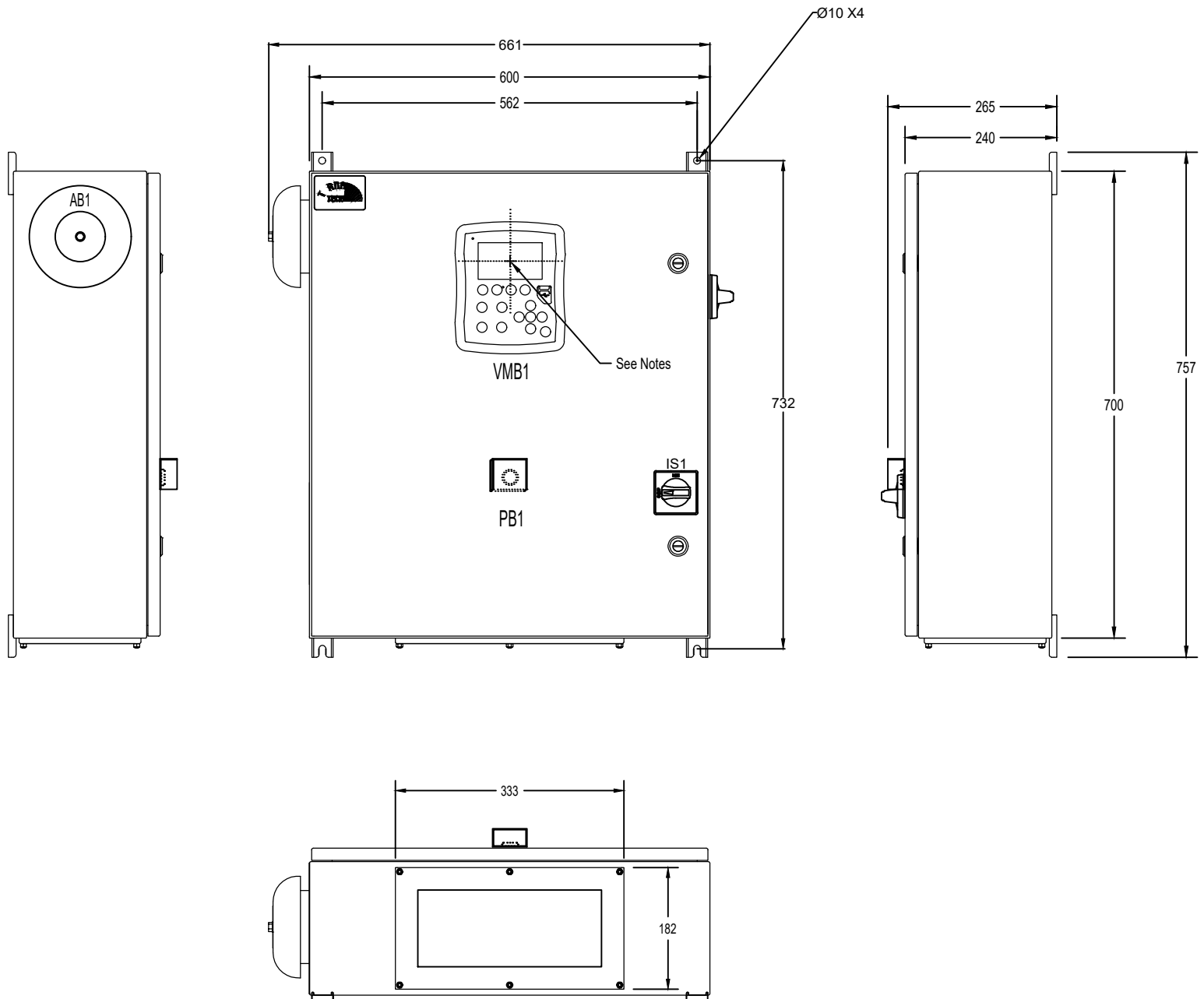
Diesel Engine Fire Pump Controller

12Vdc or 24Vdc Negative Ground

Model:HFD

Dimensions

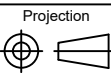
Built to the latest edition of the EN 12845 standard



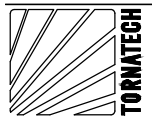
Notes:

- Standard : IP55
- Standard Paint : Textured Red RAL 3002.
- All dimensions are in millimeters.
- Center of ViZiTouch screen is 522 mm from bottom.
- Bottom conduit entrance through removable gland plate recommended.
- Use watertight conduit and connector only.
- Protect equipment against drilling chips.
- Door swing equal to door width.

Drawing for information only.
 Manufacturer reserves the right to modify this drawing without notice.
 Contact manufacturer for "As Built" drawing.



| REV. | DESCRIPTION | DD/MM/YY | Drawing number |
|------|------------------|----------|----------------|
| 0 | First issue | 13/01/15 | HFD-DI500 /E |
| 1 | General revision | 14/08/17 | |
| 2 | Revised logo | 18/06/18 | |



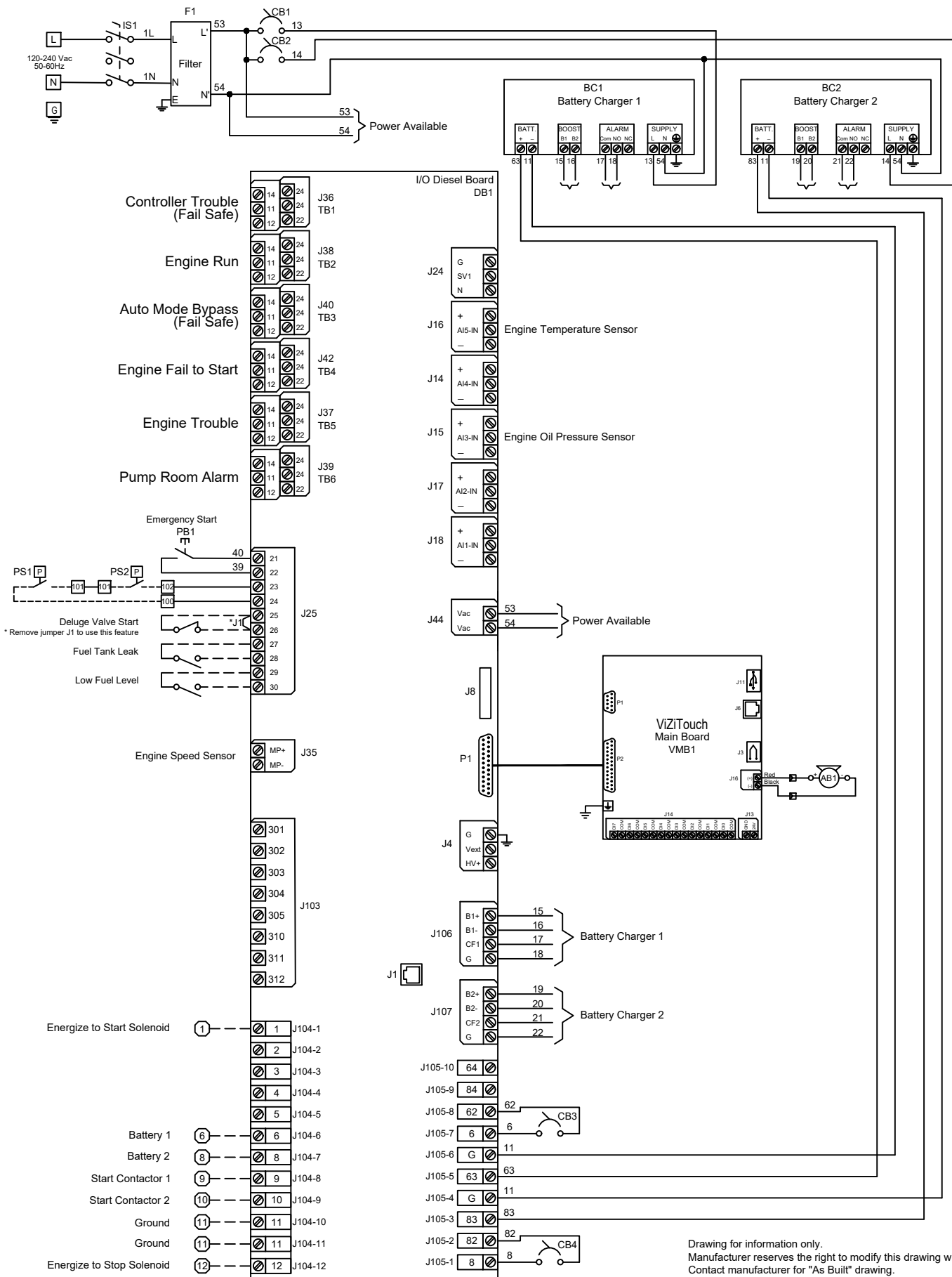
Diesel Engine Fire Pump Controller

Model:HFD

12Vdc or 24Vdc Negative Ground

Built to the latest edition of the EN 12845 standard

Wiring schematic

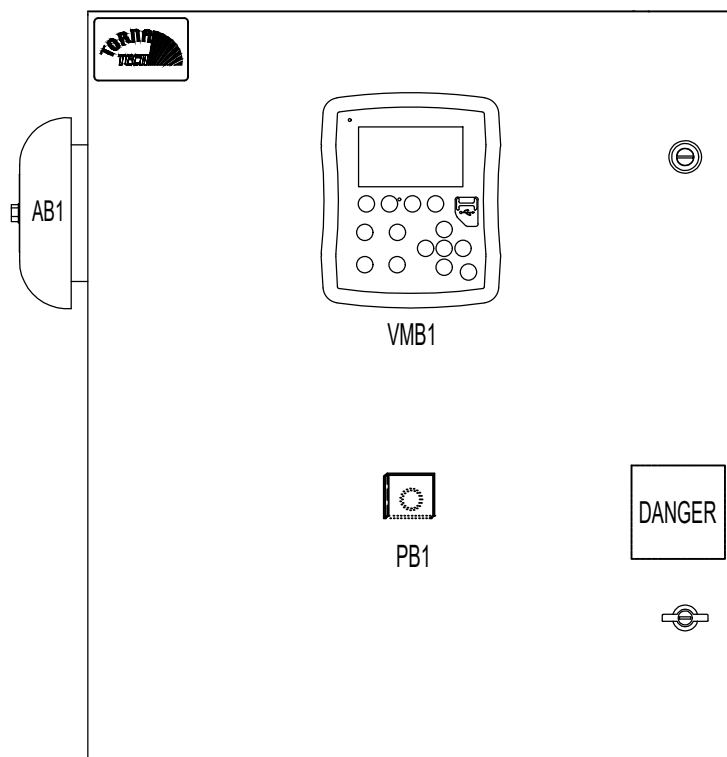


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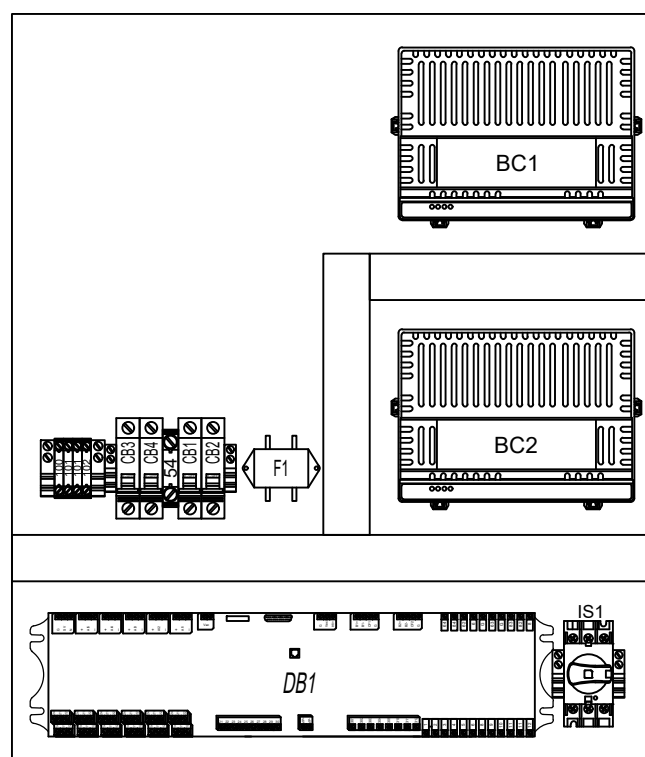


| REV. | DESCRIPTION | DD/MM/YY | Drawing number |
|------|------------------|----------|----------------|
| 0 | First issue | 13/01/15 | HFD-WS601 /E |
| 1 | General revision | 14/08/17 | |
| 2 | Revised logo | 18/06/18 | |

| Designation | Description |
|-------------|-----------------------------|
| AB1 | Alarm Bell |
| BC1-BC2 | Battery Charger |
| CB1-2 | Magnetic Breaker 1 Pole 16A |
| CB3-4 | Magnetic Breaker 1 Pole 16A |
| DB1 | I/O Diesel Board |
| F1 | Filter |
| IS1 | Isolating Switch |
| PB1 | Emergency Start Push-Button |
| VMB1 | ViZiTouch Main Board |
| 100,101,102 | Pressure Switch Terminals |



Front Door Layout



Internal Layout

Diesel Engine Fire Pump Controller

12Vdc or 24Vdc Negative Ground

Terminals Diagram

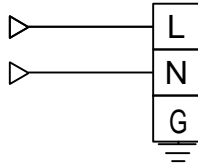
Model:HFD

Built to the latest edition of the EN 12845 standard

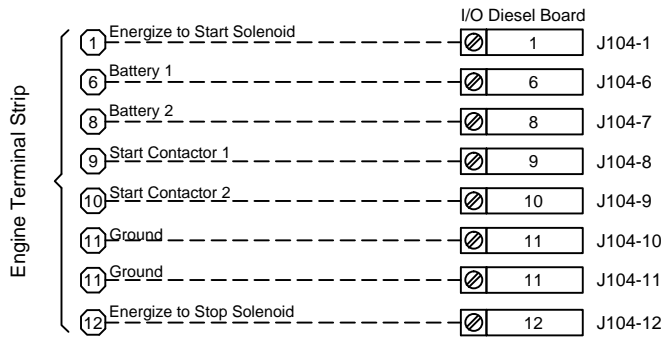
Power Supply

Terminals Wire Size:
1.5 - 16 mm²
1.9 Nm

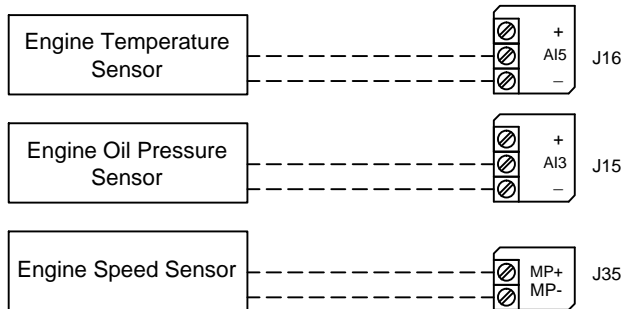
120-240 Vac
50-60Hz



Engine Connections

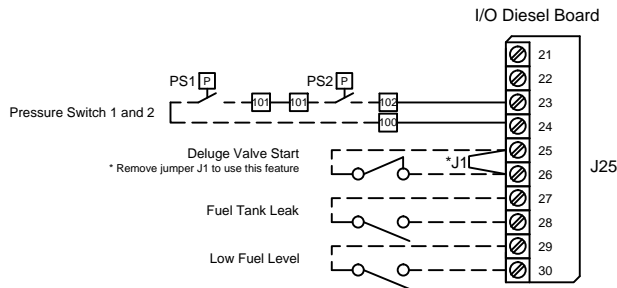


Terminals Wire Size:
0.5 - 4 mm²
0.5 Nm



Field Connections

Terminals Wire Size:
0.5 - 4 mm²
0.5 Nm



Network Connection (VMB1)

Shielded Female Connector RJ45

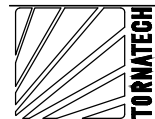
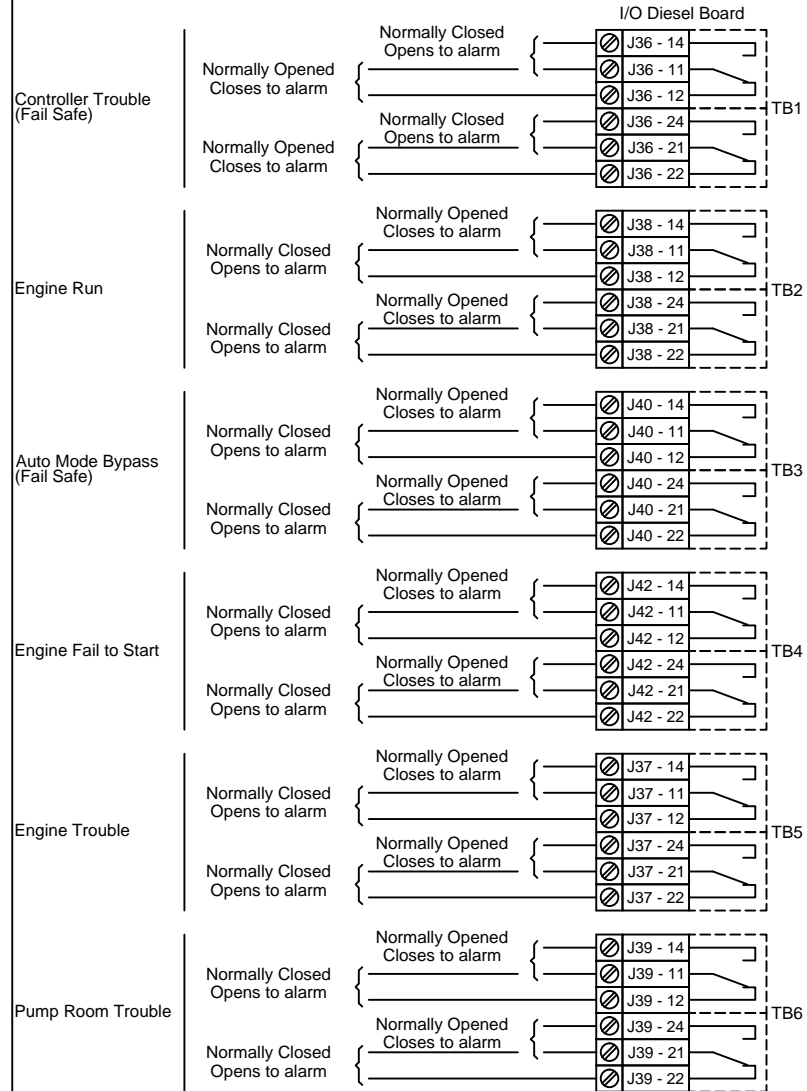
Modbus TCP/IP



Alarm Contacts

Terminals Wire Size:
0.5 - 2.5 mm²
0.5 Nm

(11-12-14) / 8A
(21-22-24) / 5A



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