TORNATECH

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GPD

Options for Diesel Fire Pump Controllers



	Tornatech Inc Laval, Canada	Tornatech Europe SA Wavre, Belgium	Tornatech FZE Dubai, UAE
Standard Enclosure Rating	NEMA 2	IP55	NEMA 2
CE	Optional	Standard	Optional
SEISMIC COMPLIANT	Optional	Optional	Optional

NFPA MEMBER 2018-2019

FM APPROVED

c UL US

This document describes our standard options. Please consult factory for any additional options / features / modifications if required.

Modifications / additions to basic sequence of operation

C6 Nickel - cadmium battery chargers (battery data sheet required)

C9 Non pressure actuated controller w/o pressure transducer and run test solenoid valve

Option required for non-pressure actuated application as per:

NFPA20 - 10.5.2.2 Nonpressure Switch-Actuated Automatic Controller.*

C14 Delayed automatic start on AC power failure (factory set at 15 minutes)

The fire pump controller will start the engine if there is a loss of AC power for a factory-determined (15 minutes – field adjustable) amount of time and continue to run the engine until AC power is restored.

C19 Lockout/interlock circuit from equipment installed inside the pump room

D4 Pressure transducer and run test solenoid valve for fresh water rated 0-500psi (for factory calibration purposes only)

D6 Pressure transducer and run test solenoid valve for sea water rated 0-500psi

D11 Low suction pressure transducer for fresh water rated for 0-300psi with visual indication and alarm contact

D11A Low suction pressure transducer for sea water rated for 0-300psi with visual indication and alarm contact

Options D11 & D11A are required when the suction pressure is required to be monitored. The fire pump controller is supplied with a pressure transducer that is required to be hydraulically connecting to the suction of the fire pump. Low suction pressure setting and reset pressure setting can be set in the "Suction Pressure" menu of theViZiTouch.
Note: Alarm only. The fire pump will not shutdown in a low suction condition.

Additive (Foam) Pump Controllers

Additive (Foam) Pump Controllers are typically designed for use in buildings where flammable or combustible liquids are present such as aircraft hangers, petro-chemical and hazardous waste facilities.

Choose one of the following configurations:

C8 Foam pump application w/o pressure transducer and run test solenoid valve

Option required for foam pump (additive pump) application as per:

NFPA20 – 10.9.2 Automatic Starting. In lieu of pressure-actuated switch described in 10.5.2.1, automatic starting shall be capable of being accomplished by the automatic opening of a closed circuit loop containing this fire protection equipment.*

C8A Foam pump application with pressure transducer and run test solenoid valve

Add any of the following options if required:

C20 Dump valve circuitry for foam (additive) pump application

Option required when two fire pumps or more are hydraulically connected in parallel in order to provide 100% redundancy (lead / stand-by) and the system is designed for only one fire pump to run at once (pumps cannot run simultaneously).

Bx79 Low foam additive pressure c/w visual indication and alarm contact

Options required for series fire pump unit as per NFPA20 - 3.3.42 Series Fire Pump Unit

C15 Low zone pump control function

Option required when two (2) fire pumps or more are hydraulically connected in series in order to prevent the high zone fire pump(s) from starting before the low zone fire pump is running. (Installed in the low zone controller.)

C16 Medium zone pump control function

Option required when three (3) fire pumps or more are hydraulically connected in series in order to prevent the high zone fire pump from starting before both the low zone fire pump and sequentially the middle zone fire pump are running. (Installed in the middle zone controller.)

C17 High zone pump control function

Option required when two (2) fire pumps or more are hydraulically connected in series to prevent the high zone fire pump from starting before eitherthe low zone fire pump and, if applicable the middle zone fire pump is running. (Installed in the high zone controller.)

Louver Activation Circuits

C13 Louver activation circuit (battery power specific)

Additional visual and/or alarm contacts for remote indications

The visual indication of an alarm condition will appear as text in the middle of the green bar on the top of the touch screen. The text will be color coded (yellow or red) in reference to the criticalness of the condition. If an alarm contact (Form C – DPDT) is also supplied, it will change state if the alarm condition occurs.

A1 Periodic test alarm contact

A2 Overspeed alarm contact

A3 Low oil pressure alarm contact

A4 High coolant temperature alarm contact

A5 Failure to start alarm contact

A6 Battery 1 & 2 failure alarm contact

A7 Charger 1 & 2 failure alarm contact

A8 AC failure alarm contact

A9 System overpressure alarm contact (for engines with PLD)

A11 Extra controller trouble alarm contact

A12 Extra engine trouble alarm contact

Ax Additional engine alarm contact

B1 Low fuel level alarm contact

B2 Water reservoir level low alarm contact

B3 Water reservoir empty alarm contact

B4 Low ambient pump room temperature alarm contact

B5 High fuel level alarm contact

B6 Low system pressure alarm contact

B7 Low suction pressure alarm contact

B8 Pump on demand alarm contact

B9 Fuel tank leak alarm contact

B10 Main relief valve open alarm contact

B11 Flow meter loop valve open alarm contact

B12 Water reservoir level high alarm contact

B13 High pump room temperature alarm contact

Bx Other addition alarm contact (specify fonction)

D28A Field programmable i/o board - 5 input/5 output

Option D28A is required when alarm conditions to be remotely monitored are not specified at time of order. The fire pump controller is supplied with an i/o (input/output) circuit board which the user has access to through a menu in the operator interface where each input and output can be programmed.

(NOTE: If more than 5 input or 5 output are required, please order this option as many times as required (max.8))

Enclosure assembly ratings

Standard paint specifications (does not apply to brushed finish enclosures):
- Red RAL3002
- Powder coated / glossy textured finish

NEMA 4 enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow, splashing water, and hose directed water); and that will be undamaged by the external formation of ice on the enclosure. NEMA 4X enclosures provide an additional level of protection against corrosion.***



Red RAL3002

D2 NEMA 4 assembly

D3A NEMA 4X assembly stainless steel-304 painted red

D3B NEMA 4X assembly stainless steel-304 brushed finish

D3C NEMA 4X assembly stainless steel-316 painted red

D3D NEMA 4X assembly stainless steel-316 brushed finish

D1 NEMA 12 assembly

Enclosures constructed (without knockouts) for indoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and circulating dust, lint, fibers, and flyings); and to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (dripping and light splashing).***

D1A NEMA 3R assembly

Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow); and that will be undamaged by the external formation of ice on the enclosure.***

D20 NEMA 3 assembly

Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel again access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow); and that will be undamaged by the external formation of ice on the enclosure.***



Stainless Steel Brushed Finish

D21 IP54 assembly

Dust Protected - Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment; complete protection against contact.
Splashing water - Water splashing against the enclosure from any direction shall have no harmful effect.**

D22 IP55 assembly

Dust Protected - Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment; complete protection against contact. Water jets - Water projected by a nozzle (6.3mm) against enclosure from any direction shall have no harmful effects.**

D23 IP56 assembly

Dust Tight - No ingress of dust; complete protection against contact. Water jets - Water projected by a nozzle (6.3mm) against enclosure from any direction shall have no harmful effects.**

D24 IP66 assembly

Dust Tight - No ingress of dust; complete protection against contact. Powerful water jets - Water projected in powerful jets (12.5mm nozzle) against the enclosure from any direction shall have no harmful effects.**

Mounting stands for free standing installation

D25 Mounting stand (steel, painted)

D25A Mounting stand stainless steel-304 painted (additional to option D3A)

D25B Mounting stand stainless steel-304 brushed finish (additional to option D3B)

D25C Mounting stand stainless steel-316 painted (additional to option D3C)

D25D Mounting stand stainless steel-316 brushed finish (additional to option D3D)

Heaters for Enclosure Assembly

Options recommended when the fire pump controller is installed in an environment other than described in NFPA20 – 4.12.1.1.*

D9A Anti-condensation heater & thermostat

D9B Anti-condensation heater & humidistat

D9C Anti-condensation heater & thermostat & humidistat

D12 Tropicalization

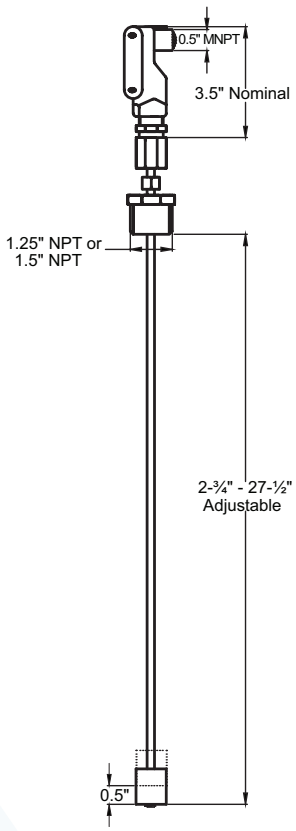
Option required when the fire pump controller is installed in an environment where electronic components and electrical coils require additional protection. Recommended as a complimentary option to options D9A, D9B and D9C and/or if the fire pump controller is installed in a hot and humid environment.

Ambient temperature ratings

Option required when the fire pump controller will be installed in a location that will have an ambient temperature in access of 40°C (104°F).

D34A Controller rated for 55°C ambient temperature

Accessories for Fuel level indication (supplied as separate items)

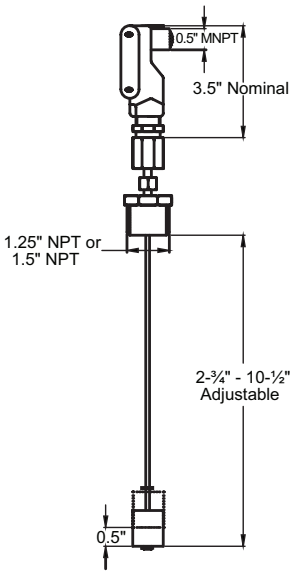


D7A Low fuel level float 1-1/4"
(supplied as separate item)

Field adjustable between 2-3/4" and 27-1/2"

D7B Low fuel level float 1-1/2"
(supplied as separate item)

Field adjustable between 2-3/4" and 27-1/2"



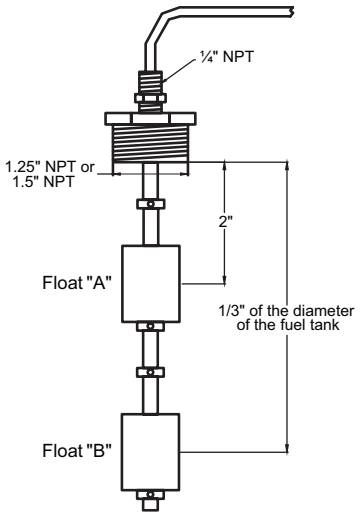
D8A High fuel level float 1-1/4'
(supplied as separate item)
Field adjustable between 2-3/4" and 10-1/2"

D8B High fuel level float 1-1/2'
(supplied as separate item)
Field adjustable between 2-3/4" and 10-1/2"

D26 Combined low and high fuel level float switch 1-1/4"
(advise diameter of fuel tank)

D26A Combined low and high fuel level float switch 1-1/2"
(advise diameter of fuel tank)

D27 Fuel level probe level indication 2"



Engine Block Heater Circuit

C7A Engine block heater circuit - 6kW max
(same as voltage as battery charger primary) Confirm power rating of block heater

C7 Engine block heater circuit - 3KW max
(Same voltage as battery charger primary)

Modbus Communication Connection Type

Standard supply is a TCP/IP type connection. Option required when the type of connection required is RTU (RS-485).

D32 Modbus RTU provision



RTU (RS-485) type connection

Additional certifications

C5 CE Mark with factory certificate

Option required when the fire pump controller is to be installed in a country that requires the fire pump controller to meet the following CE standards:

- **EN 60439-1:** Low-Voltage Equipment Assemblies
- **EN 45014:** General Criteria for Declaration of Conformity
- **89/336/CEE:** ElectroMagnetic Compatibilities Guidelines
- **73/23/CEE:** Electrical Equipment Guidelines
- **93/68/CEE:** Guidelines Modifications (CE Marking)

Languages

Option required when the fire pump controller's documentation (i.e. external and internal labels, drawings and Installation, Operation and Maintenance Manual is required to be in a language other than English.

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
L18 Thai
L19 Indonesian
L20 Slovenian
L21 Danish
L22 Greek
L23 Arabic
L24 Hebrew
L25 Chinese

References:
* National Fire protection Association. NFPA20 Standard for the Installation of Stationary Pumps for Fire Protection. 2013 ed. Quincy, Massachusetts: One Batterymarch Park, 2013. Print.
**IP code reference IEC 60529
***National Electrical Manufacturers Association. NEMA Standards Publication 250-2003, "Enclosures for Electrical Equipment (1000 Volts Maximum) NEMA Enclosure Types. NEMA Enclosures Section. Nov 2005. Rosslyn, VA. Web

Note: The information contained in this brochure is subject to change without notice.

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GPD-OPTIONS-000VE Rev.2.1