



TOUGH Series controllers have been successfully tested with several notable engine brands, including **ISUZU, KUBOTA, SCANIA, CUMMINS,** and **JOHN DEERE,** to name a few.

Contact factory for the latest engine interface listing.

### Aftertreatment

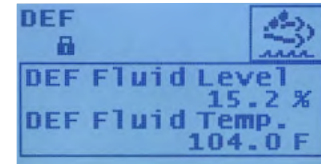
- Aftertreatment Enable  DPF
- Aftertreatment Mode
- Soot % Display  Disable  Enable
- Ash % Display  Disable  Enable
- Time Since Last Regen Display  Disable  Enable
- Exhaust Temperature Display  Disable  Enable
- DPF Gas Temperature Display  Disable  Enable
- Password  Disable  Enable
- DEF/SCR Tank Level Display  Disable  Enable
- DEF Low Level  %
- DEF High Level  %
- DEF/SCR Fluid Temperature  Disable  Enable

Disable DPF DEF/SCR

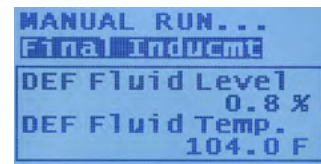
Inhibit Auto Last Running



Manual Regeneration, Exhaust Temp elevated HEST on, DPF Soot high



Support for SCR/DEF based systems; Low DEF Level



Support for DEF based inducement; DEF Fluid Empty, Final Inducement, and Engine De-rate

### CONFIGURATION OPTIONS

## AFTERTREATMENT OPERATOR INTERFACE



#### Diesel Particulate Filter (DPF) Lamp

Solid Lamp warns that DPF soot levels are increasing.

Flashing Lamp indicates DPF soot levels have reached critical stage & DPF Regen is required.

#### High Exhaust Temperature Lamp



Indicates a Regen cycle has been activated, warning of high exhaust temperatures.

#### Regen Inhibit Lamp



A Regen cannot be performed & soot levels will continue to rise.



#### Diesel Exhaust Fluid Lamp (DEF)

Solid Lamp provides warning that the DEF fluid level is low.

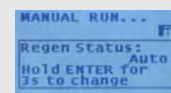
Flashing Lamp indicates DEF fluid level is empty or has reached critically low level. Engine Torque & speed will soon be de-rated & engine shutdown may occur.



#### Check Engine Lamp

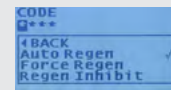
Lamp illuminates when Soot Level in the DPF are increasing, indicating a fault with the after-treatment system. Operator intervention is required to address rising DPF Soot Levels.

#### Regen Screen Display



Front Panel Scrolling Screen allows an operator to enter the Regen Menu Selection. Password may be required if enabled in configuration.

#### Regen Control



Options for Regen control: Set ECM regen to AUTO Regen, Force Manual Regen, Regen Inhibit.

Password may be required if enabled in configuration.

# TOUGH Series DTC Code Reader Support

## KEY FEATURES

Have you ever been faced with questions like...

- How do I assign my own custom text to trouble codes?
- How do I enable trouble code display only when engine is running?
- How do I ignore diagnostic trouble codes that are false and related to engine calibration?
- How do I disable diagnostic trouble code display if I don't need it?
- How do I request stored codes from ECM?

## The TOUGH Series is your solution.



DTC  
 DTC Display    
 Active DTC Log  Disable  Enable   
 Read Stored DTC  Disable  Enable   
 SPN Conversion

DTC display programmable for Disable, Enable globally, or Enable only when running.  
 Support for reading stored codes on ECM, as well as enabling the logging of DTC codes

DTC Ignore List  
 SPN 1     
 FMI 1     
 SPN 2     
 FMI 2     
 SPN 3     
 FMI 3     
 SPN 4     
 FMI 4

Troubles codes can be disabled in configuration, preventing the display of false trouble codes, although they are still on the J1939 bus.

Custom DTC Messages  
 SPN 1     
 FMI 1     
 SPN 1 Text  --> Check Engine   
 SPN 2     
 FMI 2     
 SPN 2 Text  -> Check Engine   
 SPN 3     
 FMI 3     
 SPN 3 Text  --> Check Engine

Support for up to 30 customer programmable text messages for SPN, and SPN + FMI combinations.



**CONTACT SHANE SAMSON**  
to discuss your application.

**1-888-DYNAGEN**  
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 DESK: 902-406-0133 ext. 227

# TOUGH Series J1939 Advanced Communications

Have you ever needed to know...

- How do I broadcast J1939 data on a Mechanical Engine?
- How do I broadcast Fuel Level, AC Parameters, and Auxillary Sensor data over J1939 on an Electronic Engine?
- How do I provide Start and Stop over J1939?

The **TOUGH Series** is your solution.



The TOUGH Series controller provides:

- Broadcasting of J1939 data on Mechanical Engines (See below).
- Broadcasting of data on Electronic engines (ECM enabled); Examples are Fuel Level, AC Parameters, Auxillary Sensor Data.
- Receiving Starting and Stopping commands over CAN J1939.
- Telematics interface over J1939

### TG350 / TG410 PARAMETERS (CAN J1939)

Broadcast:

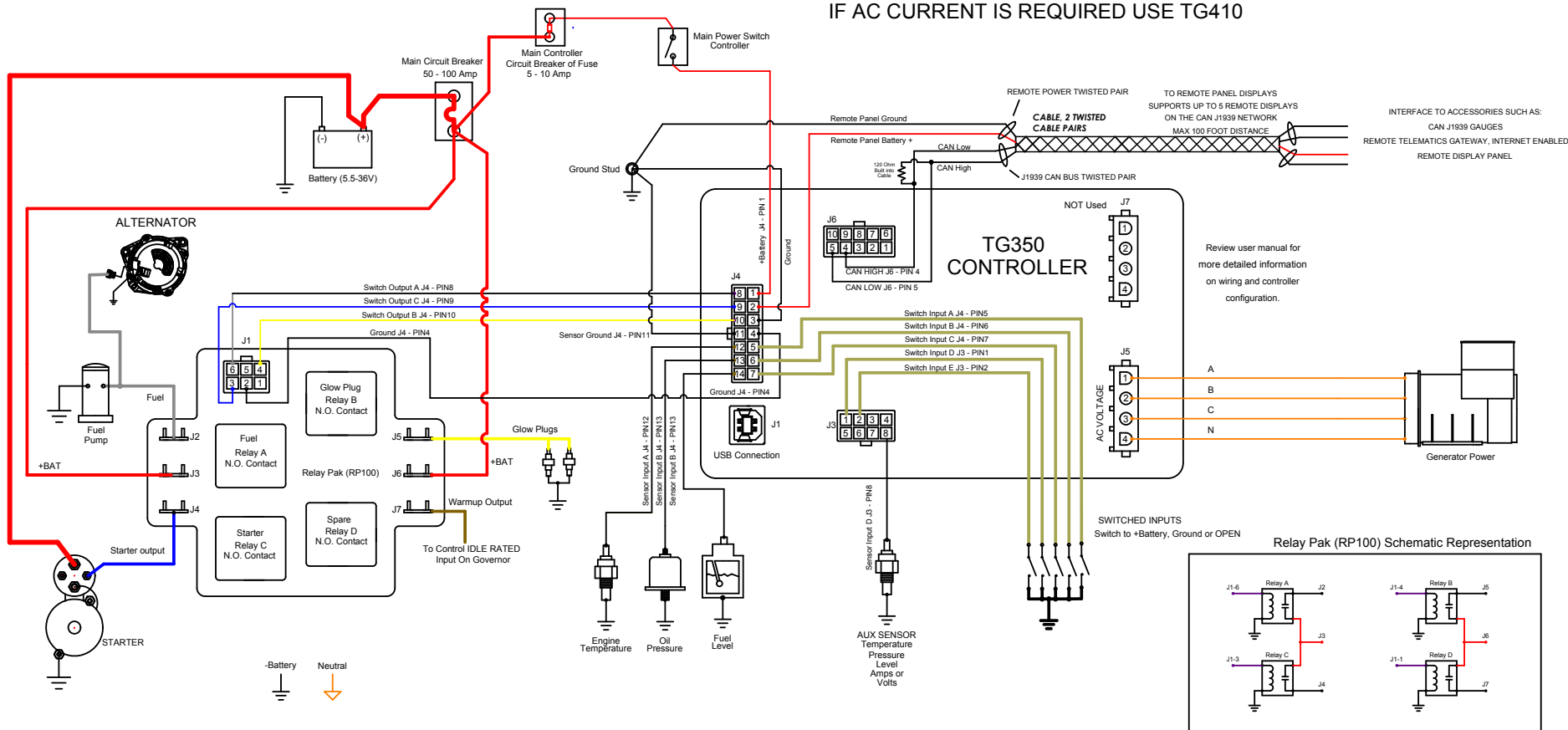
**AC Sensing**

L1-N, L2-N, L3-N AC Volts  
L1-N AC Frequency  
L1, L2, L3 AC Amps  
L10L2, L2-L3, L3-L1 AC Volts

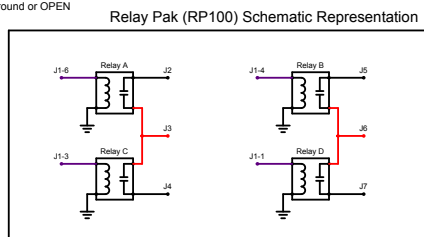
Fuel Level, System Battery Voltage,  
Engine Speed, Engine Hours  
Engine Coolant Temperature,  
Engine Oil Pressure,  
DM1 Warnings & Failures,  
AUX 1, AUX 2, AUX 3, AUX 4 Sensors

Receive: Engine Start and Stop Requests

IF AC CURRENT IS REQUIRED USE TG410



Review user manual for more detailed information on wiring and controller configuration.



**DRAWING NOTES**

NOTE 1:  
NOTE 2:  
NOTE 3:  
NOTE 4:  
NOTE 5:  
NOTE 6:  
NOTE 7:  
NOTE 8:

Relay Pak Connector	
J1-1	Relay D Coil
J1-2	-Battery
J1-3	Relay C Coil
J1-4	Relay B Coil
J1-5	
J1-6	Relay A Coil
J2	Relay A Contact
J3	A and C Common
J4	Relay C Contact
J5	Relay B Contact
J6	B and D Common
J7	Relay D Contact

Main Connector	
J4-1	+Battery
J4-2	+Battery
J4-3	Ground
J4-4	Ground
J4-5	Switch Input A
J4-6	Switch Input B
J4-7	Switch Input C
J4-8	Switch Output A
J4-9	Switch Output C
J4-10	Switch Output B
J4-11	Sensor Ground
J4-12	Sensor Input A
J4-13	Sensor Input B
J4-14	Sensor Input C

Expansion Connector	
J3-1	Switch Input D
J3-2	Switch Input E
J3-3	Switch Output D
J3-4	Switch Output E
J3-5	Switch Output F
J3-6	Sensor Power (5V)
J3-7	Sensor Ground
J3-8	Sensor Input D

Communication Connector	
J6-1	RS485-A
J6-2	RS485-B
J6-3	
J6-4	CAN High
J6-5	CAN Low
J6-6	CAN Ground
J6-7	Speed Input
J6-8	Speed Reference
J6-9	
J6-10	RS485 Ground

Generator Connector (A)	
J5-1	Gen. Current (A)
J5-2	Gen. Current (B)
J5-3	Gen. Current (C)
J5-4	Neutral

Generator Connector (V)	
J7-1	Gen. Phase A
J7-2	Gen. Phase B
J7-3	Gen. Phase C
J7-4	Neutral

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power controls you can trust

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Project Name	General Wiring Diagram
Drawing Name	Non electronic engine
Drawing Number	DWG2601
Drawing Revision	3.0.0
Drawing Scale	Not To Scale
Drawing Size	ANSI-B / Ledger
Created On	9/23/2014
Modified On	02/09/2015
Created By	Shane Samson
Modified By	Shane Samson



**CONTACT SHANE SAMSON** to discuss your application.

I understand OEM's have varying needs and requirements during new and upcoming projects. Let me leverage my extensive knowledge of engines and engine applications to help you to develop a differentiated and valued solution for your customers. Please call or email me to book an appointment to discuss your new application.

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