



High Country Tek, Inc.

Fan Drive Controller Overview

Electronic Control Solutions for the Global Fluid Power Industry



High Country Tek, Inc. (HCT)

HCT is recognized as a global market leader in hydraulic fan drive system controls, innovation and system optimization.

Our involvement in all areas of this power saving technology has led us to have a broad and in-depth industry knowledge and clear understanding of your requirements that we feel no other single solutions provider can offer.

As an independent supplier, and using our application experience, we can recommend different hydraulic technologies and manufacturers components that when combined, will meet your cooling needs while we offer you the best electronic interface for the job in hand with all the options you need to be successful.



www.hctcontrols.com



• ***How We Help You Win...***

Our sales and support people understand and readily apply all the hydraulic technologies that are commonly available such as gear, vane or piston products and can discuss the pro's, con's, differences, features and benefits so with all the options on the table, you can decide what is the best to use for your particular project.

• ***Proven Solution Provider...***

High Country Tek Inc. has in-house experienced personnel and many successful applications to prove that we can deliver the products and solutions that fit varied customer requirements, while our growing list of global high profile users is testament of our ability to use our independent industry status to design and recommend peripheral hydraulic and system parts that are right to complete the optimal package, based on technically superior attributes.

• ***Value In Use...***

A common sentence these days but is it really understood ??

Many companies will and can only equate *value* to dollars alone ?

HCT has pioneered the value proposition for fan drives and has many tools that can prove that ROI is only a short period away and that savings on many levels can be realized to the positive of vehicle owners, operators, users and the environment.

• ***Capture The Order...***

Fast response to your requests is one of our many specialties.

We have stock of the most common controllers with pre-written Graphical User Interfaces (GUI's) that allow quick and easy set-up and running of the cooling system.

If you have the hydraulic parts, we can get you the controllers to prototype, test and get approved for the application.

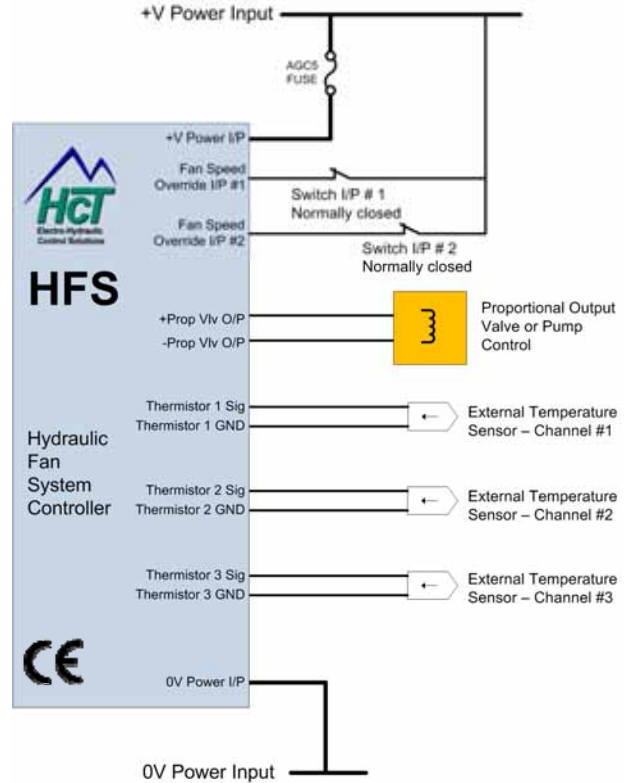


Part No:- HFS

Hydraulic Fan System Controller:

Single direction fan control

- Complete system controller
- Settings by pre-written PC program
- Simple and easy to apply
- OEM or retro-fit / repower suitable
- Full CE compliance for global sales
- Industry standard 12 way IP69K connector
- Clear diagnostic, visible LED's
- System 'error' blink code warning
- 9 - 30VDC operational power supply
- Up to 3.3A PWM output - open & short circuit protected
- Discrete thermistor inputs only (Delphi, Ford e.t.c.)
- 2 extra 'switch' override inputs (i.e. air conditioning profile)
- Environmentally hardened, mount anywhere, modular design
- Flame retardant, solid potted module.
- -40 - +85°C extended operational temp. range
- Opto3000 interface communications.

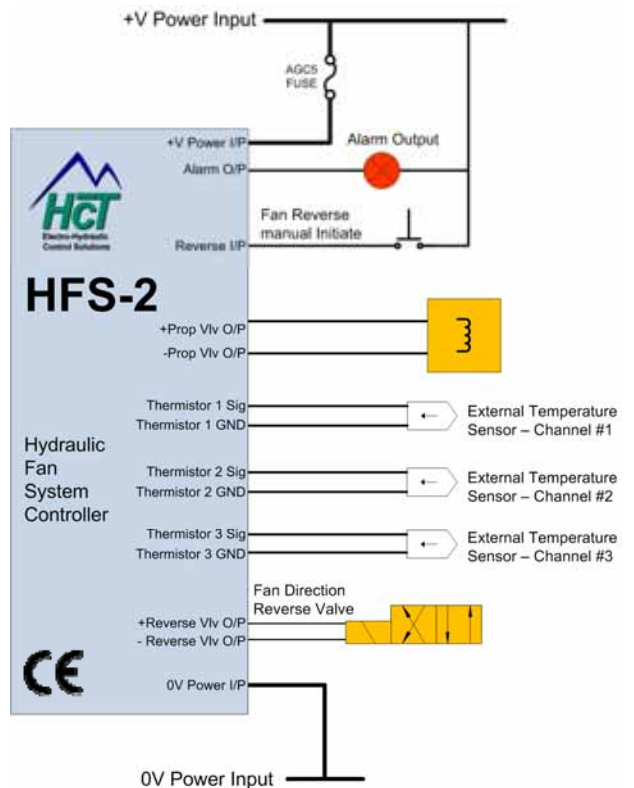


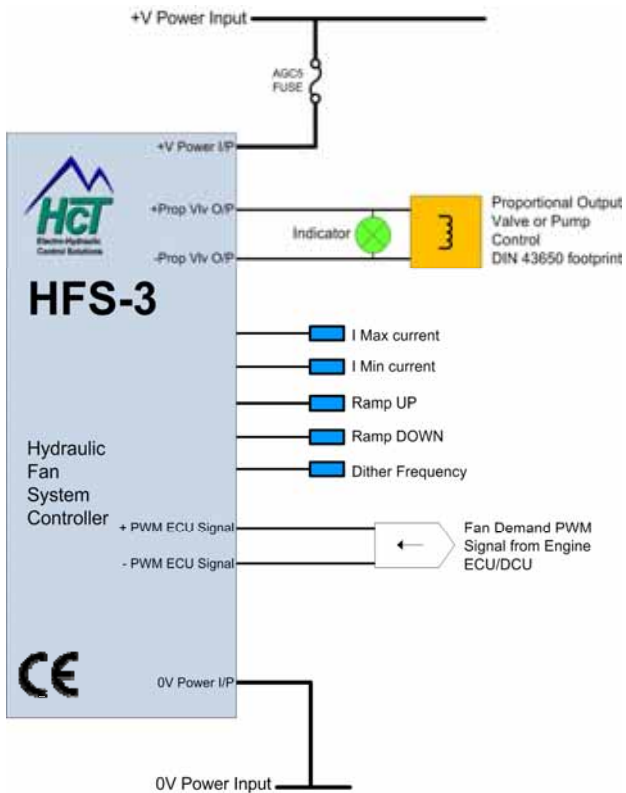
Part No:- HFS-2

Hydraulic Fan System Controller:

Bi-direction fan control

- Complete system controller
- Settings by pre-written PC program
- Full CE compliance for global sales
- Direct to PC Data logging feature
- Clear diagnostic, visible LED's with system 'error' blink code warning
- Wide 9 - 30VDC operational power supply range
- Up to 3.3A PWM and reverse valve drive output
- Alarm output for integrated system interface / shutdown options
- ALL wires to/from module are open & short circuit protected
- Discrete thermistor inputs only (Delphi, Ford e.t.c.)
- Environmentally hardened, mount anywhere, modular design
- Flame retardant, solid potted module.
- -40 - +85°C extended operational temp. range
- Opto3000 interface communications.
- Optional 'Weatherpack' connectors available





Part No:- HFS-3

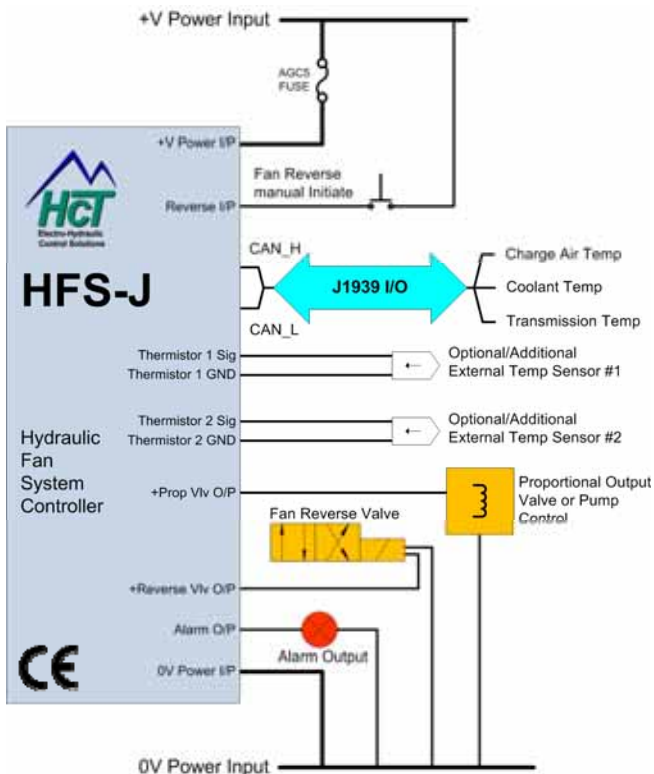
Hydraulic Fan System Controller:

Single direction fan control

- 12V or 24VDC versions available
- Direct connect to engine ECU PWM
- **Full CE compliance** for global sales
- Manual adjustments for optimization
- Industry standard DIN 43650 connector
- Visible LED for operation status
- PWM output - open & short circuit protected
- 1200mA @ 12V and 600mA @ 12V supply
- Environmentally hardened, mount anywhere design
- Flame retardant, solid potted module.
- -20 - +70°C operational temp. range
- **Typically used with larger Marine style engines**



SAE J1939 Compatible



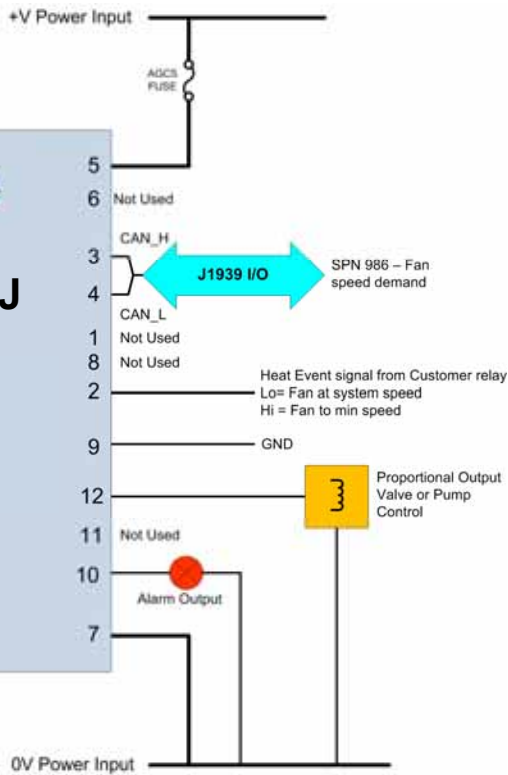
Part No:- HFS-J

Hydraulic Fan System Controller:

Bi-direction fan control

- **SAE J1939 compatible**
- Pre-written PC program
- 9 - 30VDC power supply
- Direct RS232 connection
- Direct to PC Data logging
- Fan reverse feature
- **Full CE compliance** for global sales
- Industry standard 'Deutsch', male 12 IP69K way connector
- Simplified clear diagnostic, visible LED's with error 'blink' code
- Up to 3.3A PWM output - open & short circuit protected
- 2 extra override inputs (i.e. air conditioning profile)
- Environmentally hardened, mount anywhere, modular design
- Flame retardant, solid potted module.
- -40 - +85°C extended operational temp. range





Part No:- HFS-J-Bus

Hydraulic Fan System Controller:

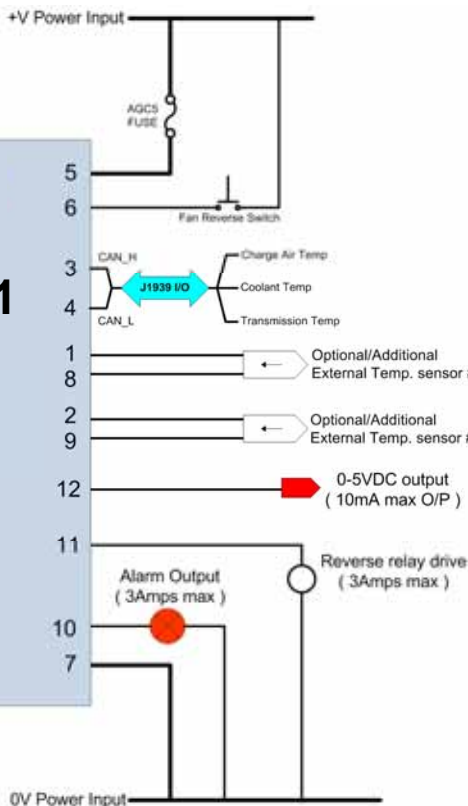
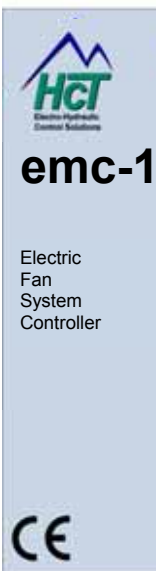
Uni-direction fan control

- SAE J1939 compatible
- Pre-written PC program
- 9 - 30VDC power supply
- Direct RS232 connection
- Direct to PC Data logging
- Full CE compliance for global sales
- Industry standard 'Deutsch', male 12 way IP69K connector
- Simplified clear diagnostic, visible LED's with error 'blink' code
- Up to 3Amp PWM output - open & short circuit protected
- 1x 3Amp alarm output for system interface and annunciation
- Environmentally hardened, mount anywhere, modular design
- Flame retardant, solid potted module.
- -40 - +85°C extended operational temp. range



- 1x 'Heat Event' override drives fan to minimum speed

SAE J1939 Compatible



Part No:- emc-1

Electric Fan System Controller:
Single channel/cooling Bank.

Bi-direction E-fan control

- SAE J1939 compatible
- Pre-written PC program
- 9 - 30VDC power supply
- Direct RS232 connection
- Direct to PC Data logging
- Full CE compliance for global sales
- Industry standard 'Deutsch', male 12 way IP69K connector
- Simplified clear diagnostic, visible LED's with error 'blink' code
- 2x optional/ external discrete temperature sensor inputs
- 1x 0-5VDC output to motor controller - open & short circuit protected
- 1x 3Amp alarm output for system interface and annunciation
- 1x 3Amp 'reverse' relay output
- Environmentally hardened, mount anywhere, modular design
- Flame retardant, solid potted module.
- -40 - +85°C extended operational temp. range

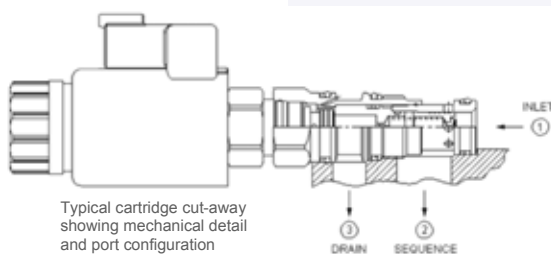


• **Technical Advantage through System Solutions**

HCT and our distributor network have the experience and personnel to ensure you select the right controller and valve combination to make your application work right, work effectively and most importantly, work the first time.

To demonstrate our ability to offer optimized packages to the market, we have chosen to use hydraulic valves that provide several unique fluid and mechanical features that when combined with HCT controllers, truly show gains in efficiency, resulting in lower operating costs, while providing the user with confidence in correct and reliable system operation.

• **Optimized Application Example - Hydraulic Fan Drive**



Available Flow USGPM	Available Flow LPM	Max Pressure PSI	Max Pressure Bar	Pilot Cavity	Main Stage Cavity	Seal Options Buna-N	Seal Options Viton
15	60	5000	350	T-8A	T-11A	Yes	Yes
30	120	5000	350	T-8A	T-2A	Yes	Yes
60	240	5000	350	T-8A	T17A	Yes	Yes
120	480	5000	350	T-8A	T-19A	Yes	Yes

• **Features, Benefits and Added Value:**

- **Off-the-shelf, standard fan system controllers for virtually all needs in this application field**
- Cooling system references across all industry platforms - ready with answers for your projects
- Controllers operate successfully with ALL OEM manufacturers valve products
- Valves & Manifold combinations, designed to suit exact application needs offer:
 - ⊙ *Multiple feature/system integration - e.g. fan drive flow + steering flow e.t.c.*
 - ⊙ *Ports and Hose routing to give most effective flow paths - installation savings*
 - ⊙ *Smaller manifold possibilities = easier handling, location and mounting*
 - ⊙ *Embedded components = reduced inventory, assembly & test costs and 'dock-to-stock'*
- Valves that have up to **5000PSI operating pressure** offer:
 - ⊙ *Opportunity to use smaller Pumps, Motors and hoses = less hydraulic product weight*
 - ⊙ *Lower valve pressure drop = more effective use of input power*
 - ⊙ *Smaller manifold possibilities = easier handling, location and mounting*
 - ⊙ *Higher installation torque = less leaks, less prone to cartridge 'wind-out'*

Visit our extensive 'Fan Drive' section on the HCT website to see controller solutions and use the free tools to help you with ROI and other customer focused information:

www.hctcontrols.com



Controller Accessories: 'Wet' Fluid Sensor - P/No. 206-00083

- -40 °C to + 150 °C operating range
- 'Wet' fluid means liquids i.e. Coolant, oils e.t.c.
- High Quality Brass Body with thread lock
- Hydraulic Fan drive systems with multi-path coolers
- Closed loop temperature applications
- Direct installation into liquid path
- Hydraulic Manifolds and OEM products
- Direct installation into radiators
- Integrated IP69K Deutsch connector

Sensor Body:	Brass
Connector Body:	PBT 30% Glass Filled
Hex Size:	18.9mm / 3/4"
Thread Size:	3/8" - 18 NPTF
Thread Sealant:	GM09985473
Sealing Pressure:	145kPa
Installation Torque:	20Nm
Overall Weight:	40g



Controller Accessories: 'Dry' Fluid Sensor - P/No. 206-00084

- -40 °C to + 150 °C operating range
- 'Dry' fluid means gasses i.e. charge air e.t.c.
- Thermoplastic body
- NO galvanic reactions with metals
- Cost effective and robust product design
- Simple assembly process into application
- NO internally moving components
- Proven Thermistor technology
- Integrated IP69K Deutsch connector

Sensor Body:	PEI (polyetherimide) 30% GF
Connector Body:	PBT 30% Glass Filled
Hex Size:	18.9mm / 3/4"
Thread Size:	3/8" - 18 NPTF
Thread Sealant:	GM09985490
Sealing Pressure:	145kPa
Installation Torque:	10.8 - 16.3 Nm
Overall Weight:	13.2g
Color:	Black



Controller Accessories: P/No. Opto 3000

- **Used with HFS, HFS-2 and HFS-2Q controllers only**
- USB to optical head unit
- Used for set-up and diagnostics only

NOTE: The Opto 3000 is **NOT CE MARKED** and is for use only during set-up and diagnostics and NOT Intended to be used as a permanently connected piece of equipment.



Controller Accessories: P/No. 999-10075

- **Use with HFS-J family controllers only**
- RS232 port to 4 way WeatherPack connector
- Used for set-up and diagnostics only

NOTE: Contact HCT for USB to RS232 converters if required





- ❖ Mining & Exploration
- ❖ Agriculture
- ❖ Cranes & lifts
- ❖ Refuse & Recycling
- ❖ Construction
- ❖ Off-Road vehicles
- ❖ Forestry, Wood & Pulp
- ❖ Reclamation & Salvage
- ❖ Oil Field & Sands
- ❖ Demolition Equipment
- ❖ Cooling Solutions
- ❖ Military Apparatus
- ❖ Specialty Use
- ❖ Remote Control
- ❖ Power Generation
- ❖ Emission Controls
- ❖ Integrated Drivers
- ❖ Valve & Pump Controls



HCT Product Sales and Support:

For a full list of authorized distributors worldwide, please visit:

www.hctcontrols.com/distributors/index.htm

To discuss anything in this brochure, order product, get price and delivery or book a training course, please contact our customer service department through E-mail at: info@hctcontrols.com

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