

Programmed with Danfoss Pro-FX® Control Software  
32-bit Processor, 4.3" WVQA Sunlight Viewable Display

The high performance VFX40m display is designed to provide an operator interface for on and off-highway mobile applications. This HMI features a powerful processor, bright sunlight viewable optically bonded LCD assembly, configurable CAN channels and flexible I/O to meet the needs of a variety of demanding applications.



Technical Data

Dimensions	7.69" x 4.00" x 2.34"
Weight	.44 kg
Case Material	ABS/Polycarbonate blend cases
Storage Temperature Range	-40°C to +85°C
Operating Temperature Range	-40°C to +85°C
IP Rating - Front	IP66, IP67
IP Rating - Back	IP66, IP67
Power Supply	
Supply Voltage	6-32 VDC
Peak Supply Voltage	32 VDC
Max Power Consumption	10 W
Max Sleep Current	400 mA
Ignition Pin (K15)	Ignition pin will put the unit in 'sleep' mode when it is powered off.



# Technical Data

## CPU

CPU Type	Freescale i.MX357
Frequency	532 MHz
Bit Width	32 bits
Operating System	Linux

## Memory

RAM	128 MB DDR2
Data Memory (RAM retain)	1 MB
Flash (ROM program & data combined)	256 MB (cannot be used to store captures on models with video inputs)

## Standards

Vibration	7.86 G RMS (5-2000 Hz) SAE J1455 Section 4.9.4.1
Shock	50g - SAE J1455 Section 4.10.4
Radiated Immunity	SAE J1113-21 (150 V/m), SAE J1113-26 (15 kV/m), EN61000-4-3 (10 V/m)
Radiated Emission	SAE J1113-41 (Class 4), EN50121-3-2, EN60945, EN61000-6-3
Conducted Immunity	SAE J1113-2 (3.0 Vp-p), SAE J1113-4 (200 mA), SAE J1113-11 (Level 4), SAE J1113-12 (Level 4), EN61000-4-4, EN61000-4-5, EN60945 Sec 10.3 (3 V/10 V RMS), EN50121-3-2 (10 V RMS)

## Certifications

### CE Mark

## Graphical Interface

Display Type	Bonded, color transmissive TFT LCD;
LCD Size	4.3"
Resolution	480 x 272, WQVGA
Color Format Supported	16-bit color
Aspect Ratio	16:9
Orientation	Landscape
Display Backlight	LED, 500-650 cd/m2 (30,000 hr lifetime)
Sunlight Viewability	Direct sunlight

## Video Interface (Optional feature- not included on all models)

Video Type	2 NTSC/PAL
------------	------------

## Boot-up

Boot-up Screen	Customizable
Boot (first powered-on):	TYP. ~ 9 sec. to logo, 17 sec. to first screen
Wake (display backlights set to zero):	TYP. ~1 sec.

# Technical Data

## Communications

### CAN Interface 1

CAN Specification	2.0A, 2.0B
Baud Rates	Configurable 125 kb/s, 250 kb/s, 500 kb/s, 1 Mb/s
Protocols	J1939 and CANopen master

### CAN Interface 2

CAN Specification	2.0A, 2.0B
Baud Rates	Configurable 125 kb/s, 250 kb/s, 500 kb/s, 1 Mb/s
Protocols	J1939 and CANopen master

### USB Interface

USB Specification	USB 2.0 (Note: 3.0 devices are compatible), used for programming
Baud Rate	Supports USB full speed at 6 Mbit/s

Note: USB interface is not protected against battery level faults.

### Real Time Clock

Estimated Battery Life	Minimum 300 day time/date retention between charges
Rechargeable	Yes, Li-Ion (non-replaceable)

### Keypads

Number of Buttons	8
Button Style	Tactile feedback
Button Backlight	Yes

### Input

Resolution	10 bits
Accuracy	+/- 1% FS
Measuring Ranges	Digital, 0-5 V, 4-20 mA, Resistive
Scan Rate	10 Hz (100 ms)

### Digital Input (must be switched to ground)

Type	High Side in
Input Impedance	100 kOhm
Switch-on Level	4.01 V
Switch-off Level	1.04 V

### Voltage Input - 0 - 5V

Input Impedance	10 kOhm
-----------------	---------

### Current Input - 0 - 24 mA

Input Impedance	200 Ohm
-----------------	---------

### Resistive (0-5V)

Pull-up Resistance	400 Ohm
--------------------	---------

# Technical Data

## Outputs

### Digital Output – 500 mA

---

Type	Low Side
Amperage	500 mA Max
Diagnostics	Open/Short circuit protection

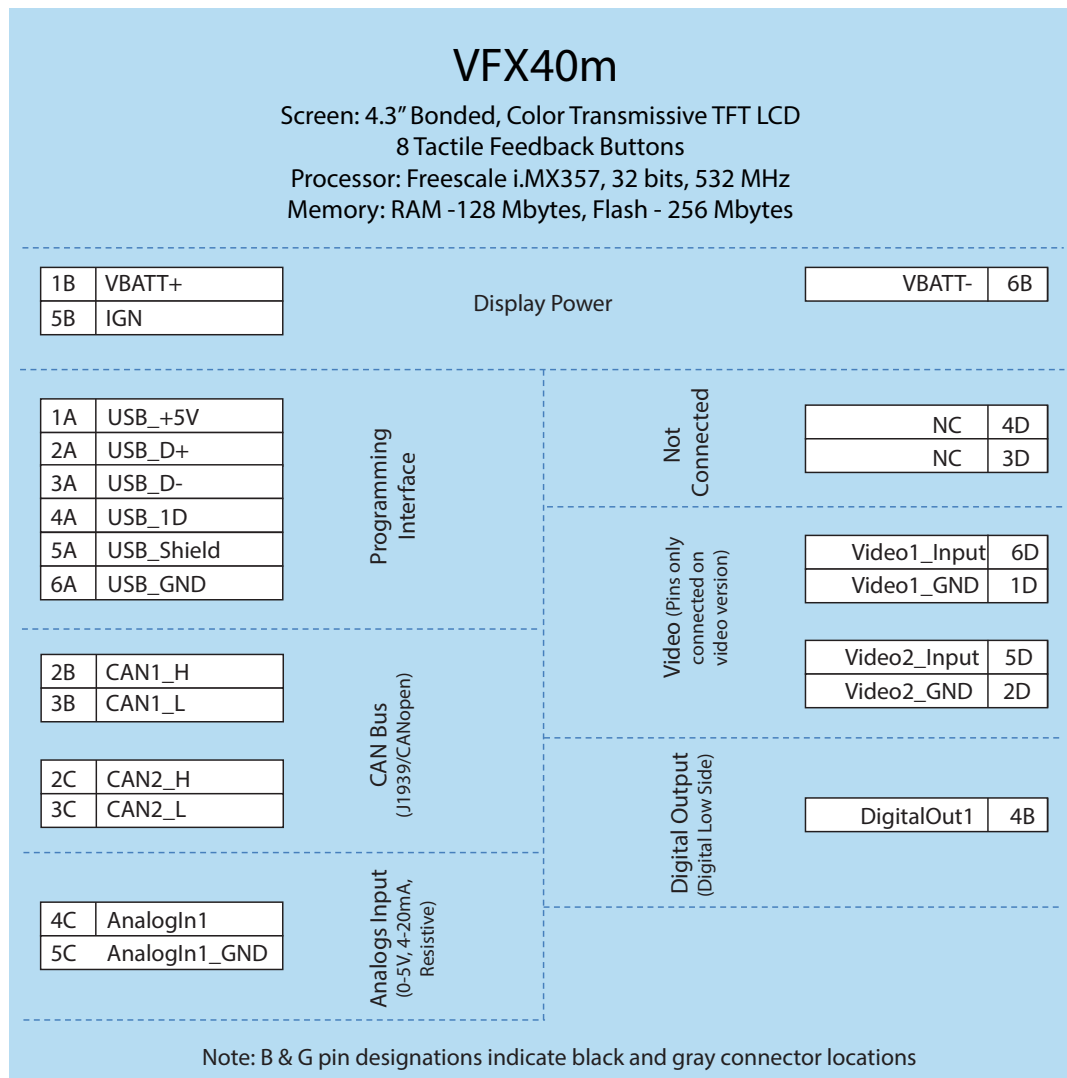
## Connections

### Connector – 4 x 6 pin

---

Manufacturer	Deutsch
Model	DT04-6P
Contact Surface	Nickel plated

# Block Diagram



# Connector Pins

## Plug A

Type	Deutsch
Pin	Function
1	USB 5V
2	USB D+
3	USB D-
4	USB 1D
5	USB Shield
6	USB Ground

## Plug B

Type	Deutsch
Pin	Function
1	Battery
2	CAN1 H
3	CAN1 L
4	Open-Drain Battery Output
5	Ignition Input
6	Ground

\* Not connected on VFX40m

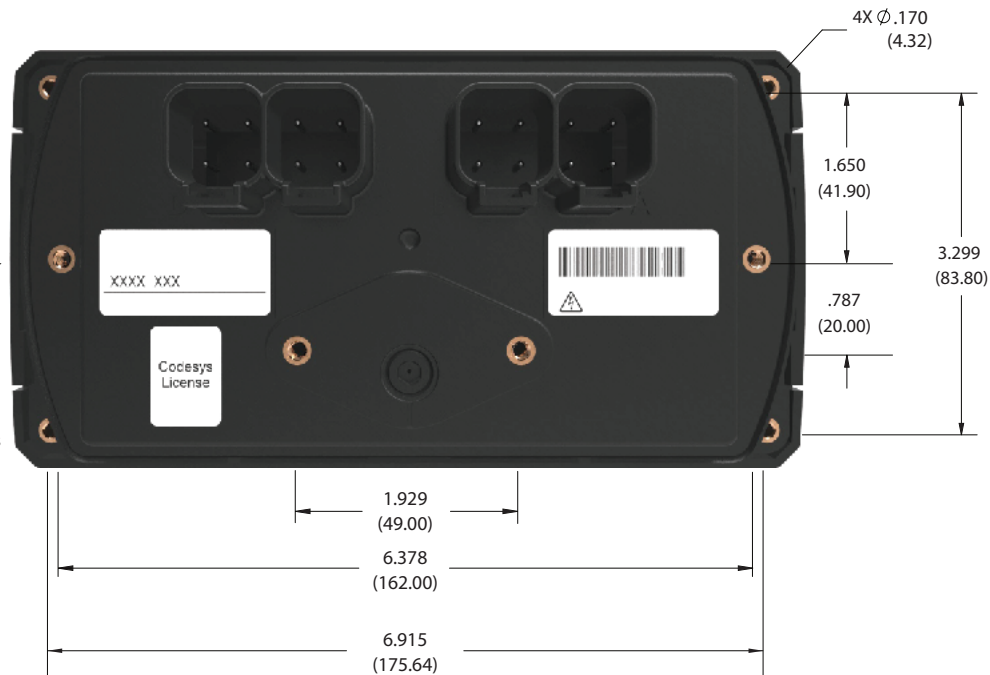
## Plug C

Type	Deutsch
Pin	Function
1	Not Connected
2	CAN2 H
3	CAN2 L
4	Analog Input Ground
5	Analog Input
6	Not Connected

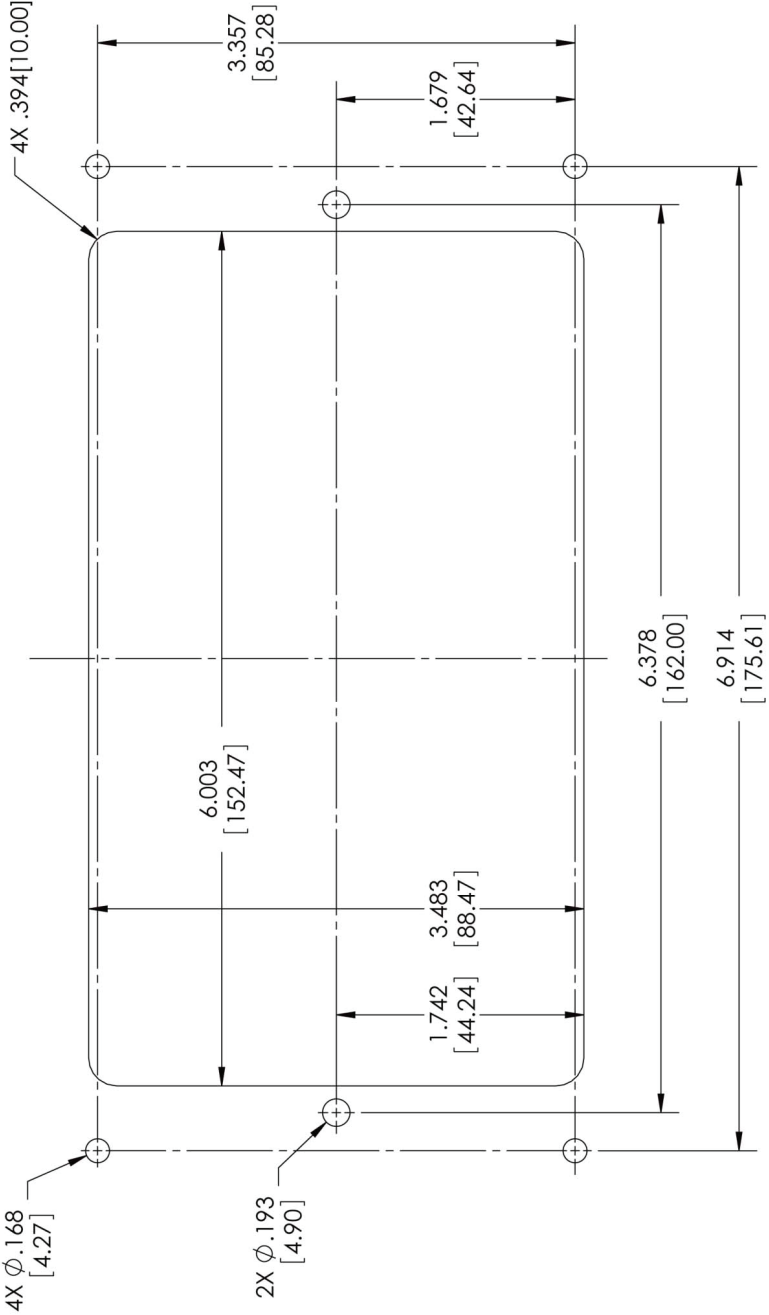
## Plug D

Type	Deutsch
Pin	Function
1	Video Ground 1*
2	Video Ground 2*
3	Not Connected
4	Not Connected
5	Video Input 2*
6	Video Input 1*

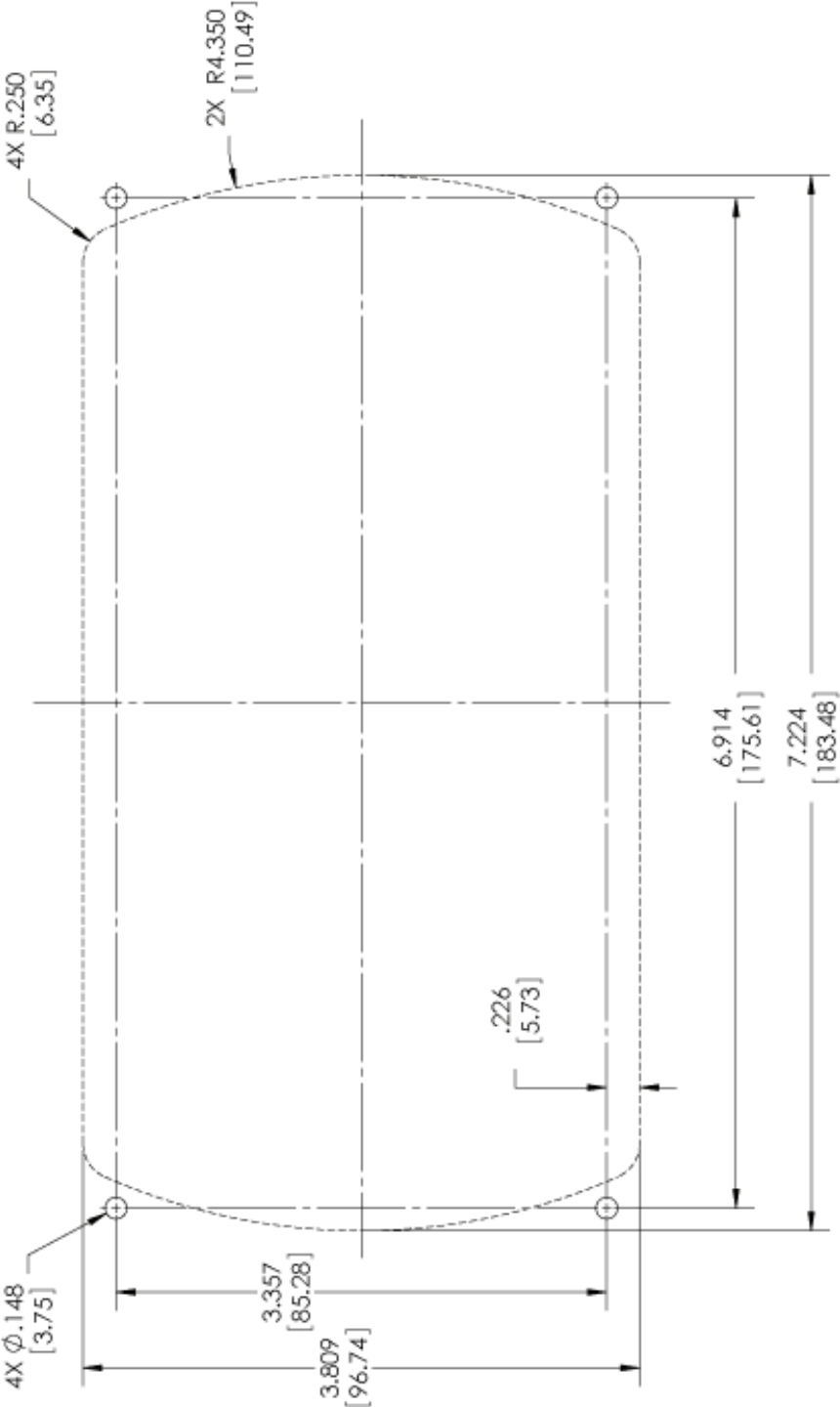
# Mounting



# Cut-outs



# Cut-outs





### Products we offer:

- Cartridge valves
- DCV directional control valves
- Electric converters
- Electric machines
- Electric motors
- Gear motors
- Gear pumps
- Hydraulic integrated circuits (HICs)
- Hydrostatic motors
- Hydrostatic pumps
- Orbital motors
- PLUS+1® controllers
- PLUS+1® displays
- PLUS+1® joysticks and pedals
- PLUS+1® operator interfaces
- PLUS+1® sensors
- PLUS+1® software
- PLUS+1® software services, support and training
- Position controls and sensors
- PVG proportional valves
- Steering components and systems
- Telematics

**Danfoss Power Solutions** is a global manufacturer and supplier of high-quality hydraulic and electric components. We specialize in providing state-of-the-art technology and solutions that excel in the harsh operating conditions of the mobile off-highway market as well as the marine sector. Building on our extensive applications expertise, we work closely with you to ensure exceptional performance for a broad range of applications. We help you and other customers around the world speed up system development, reduce costs and bring vehicles and vessels to market faster.

Danfoss Power Solutions – your strongest partner in mobile hydraulics and mobile electrification.

### Go to [www.danfoss.com](http://www.danfoss.com) for further product information.

We offer you expert worldwide support for ensuring the best possible solutions for outstanding performance. And with an extensive network of Global Service Partners, we also provide you with comprehensive global service for all of our components.

Local address:

### Hydro-Gear

[www.hydro-gear.com](http://www.hydro-gear.com)

### Daikin-Sauer-Danfoss

[www.daikin-sauer-danfoss.com](http://www.daikin-sauer-danfoss.com)

**Danfoss  
Power Solutions (US) Company**  
2800 East 13th Street  
Ames, IA 50010, USA  
Phone: +1 515 239 6000

**Danfoss  
Power Solutions GmbH & Co. OHG**  
Krokamp 35  
D-24539 Neumünster, Germany  
Phone: +49 4321 871 0

**Danfoss  
Power Solutions ApS**  
Nordborgvej 81  
DK-6430 Nordborg, Denmark  
Phone: +45 7488 2222

**Danfoss  
Power Solutions Trading  
(Shanghai) Co., Ltd.**  
Building #22, No. 1000 Jin Hai Rd  
Jin Qiao, Pudong New District  
Shanghai, China 201206  
Phone: +86 21 2080 6201

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequent changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.