

Programmed with Eaton Pro-FX® Control Software  
32-bit Processor, 7" WVQA Sunlight Viewable Display

The high performance VFX71m display is designed to provide an operator interface for on and off-highway mobile applications. This HMI can accept up to 3 video inputs, 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

Functional Specification - Physical & Environmental

Dimensions	10.27 x 5.67" x 2.512"
Weight	.96 kg
Case Material	Polycarbonate back case
Storage Temperature Range	-40°C to +85°C
Operating Temperature Range	-40°C to +85°C
Heater	Standard
IP Rating - Front	IP66, IP67
IP Rating - Back	IP66, IP67

Power Supply

Supply Voltage	6-36 VDC
Peak Supply Voltage	36 VDC
Max Power Consumption	10 W
Max Power Consumption with Heater Option	22 W
Max Sleep Current	400 mA
Ignition Pin (K15)	Ignition pin will put the unit in 'sleep' mode when it is powered off.



Powering Business Worldwide

# Technical Data

## CPU

CPU Type	Freescall 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)	2 GB (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), CISPR 11 Class B/EN60945 Hybrid
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/10V RMS)

## Certifications

### CE Mark

## Graphical Interface

Display Type	Bonded, color transmissive TFT LCD
LCD Size	7"
Resolution	800 x 480, WQVGA
Color Format Supported	16-bit color
Aspect Ratio	16:9
Orientation	Landscape
Display Back Light	LED, >1000 cd/m <sup>2</sup> (50,000 hr lifetime)
Sunlight Viewability	Direct sunlight

## Touch Interface (Optional feature: not included on all models)

Touch screen technology	Projected capacitive
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## Video Interface (Optional feature: not included on all models)

Video Type	3 NTSC/PAL
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## 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 9.5 yr (display never powered)
Rechargeable	No, Lithium (non-replaceable)

### Keypads

Number of Buttons	14
Button Style	Tactile feedback
Button Backlight	Yes

### Digital Inputs x 5 (must be switched to ground)

Type	High Side in
Input Impedance	10 kOhm
Scan Rate	10 Hz (100 ms)
Switch-on Level	4.01 V
Switch-off Level	1.04 V
Short Circuit Protection	28 V or Ground

### Analog Inputs x 3 (Software configurable)

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

### Digital Input

Type	High Side in
Input Impedance	10 kOhm
Switch-on Level	4.01 V
Switch-off Level	1.04 V

### Voltage Input - 0 - 5V

Input Impedance	100 Ohm
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### Current Input - 0 - 24 mA

Input Impedance	200 Ohm
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# Technical Data

## Resistive (0-5V)

Pull-up Resistance	400 Ohm
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## Frequency Input

Type	3.6 VAC – 120 VAC
Input Impedance	14.02 kOhm
Input Frequency	2 Hz - 10 kHz
Switch-on Level	2.10 V
Switch-off Level	1.17 V

## Outputs

### Digital Output – 500 mA

Type	Low Side
Amperage	500 mA Max.
Protection	Short circuit protection

### Frequency Output

Type	Square wave
Duty Cycle	50%, non-adjustable
Frequency Range	2 Hz - 3 kHz

## Connections

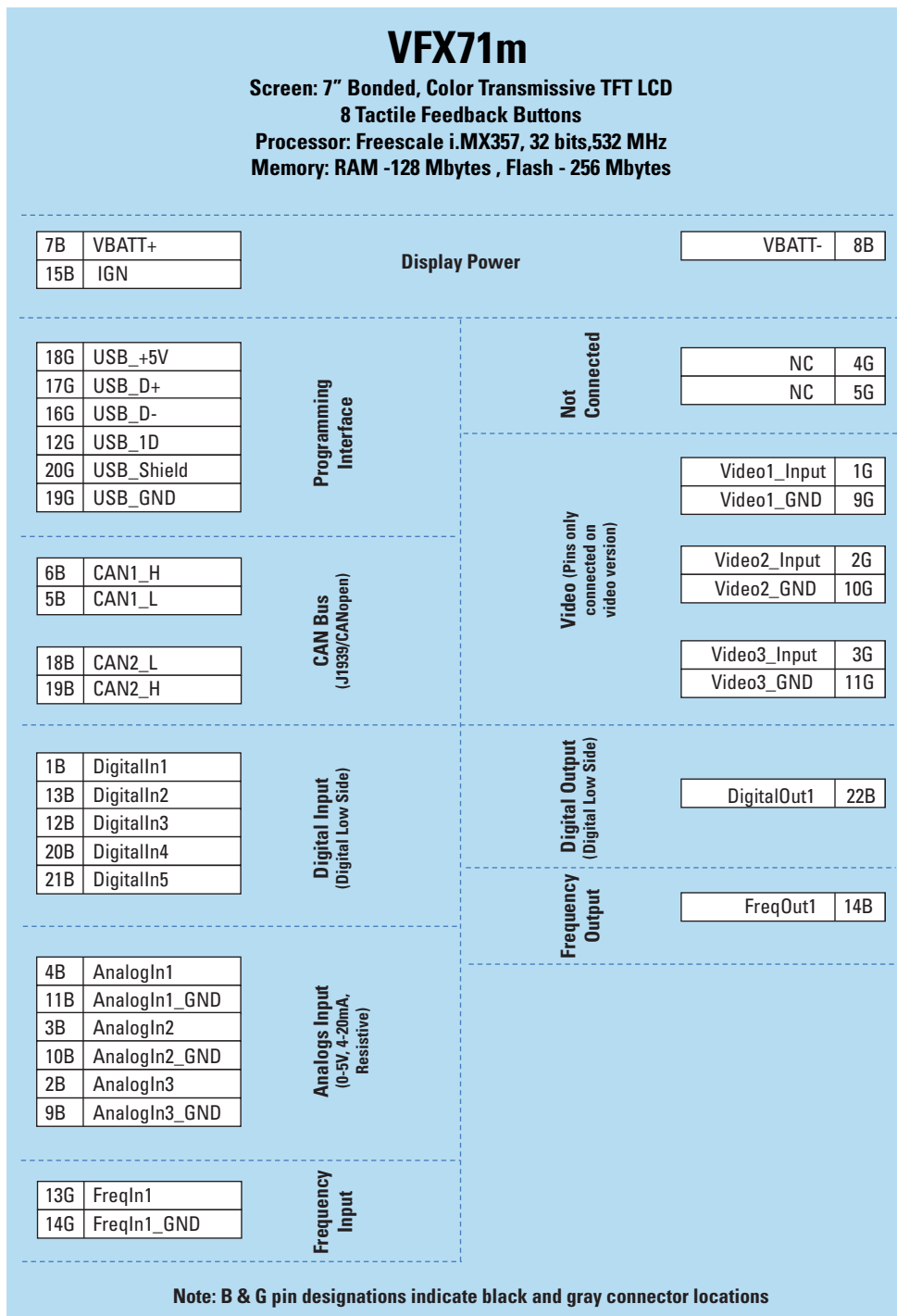
### Connector – 2 x 23 pin Ampseal

Manufacturer	AMP
Model	770680-1 (Black), 770680-4 (Gray)
Contact Surface	Nickel plated

### Tooling

Manufacturer	AMP
Hand Tool Part Number	58529-1
Die Part Number	58529-2

# Block Diagram



# Connector Pins

## Connector 1

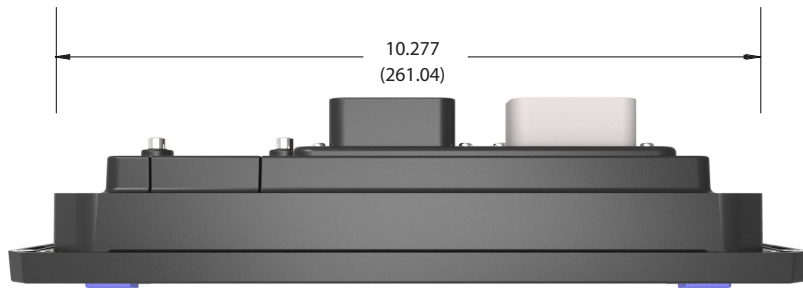
Type	Deutsch	AMP770680-1 (Black)
Pin		
1	Digital Input 1	
2	Analog Input 3	
3	Analog Input 2	
4	Analog Input 1	
5	CAN1 L	
6	CAN1 H	
7	Battery	
8	Ground	
9	Analog Input 3 Ground	
10	Analog Input 2 Ground	
11	Analog Input 1 Ground	
12	Digital Input 3	
13	Digital Input 2	
14	Analog gauge output 1	
15	Ignition In	
16	Not Connected	
17	Not Connected	
18	CAN2 L	
19	CAN2 H	
20	Digital Input 4	
21	Digital Input 5	
22	Digital Output	
23	Not Connected	

\* Not connected on VFX70m

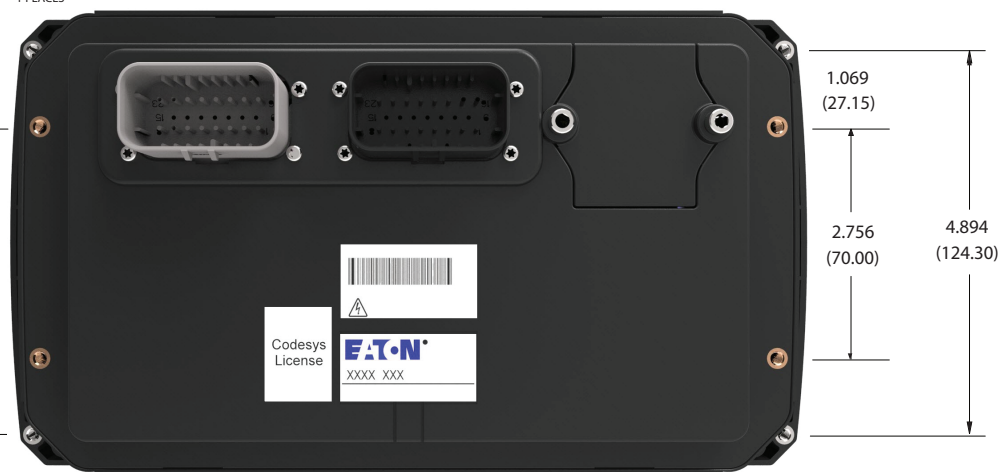
## Connector 2

Type	Deutsch	AMP770680-4 (Grey)
Pin		
1	Video Input 1*	
2	Video Input 2*	
3	Video Input 3*	
4	Not Connected	
5	Not Connected	
6	Not Connected	
7	Not Connected	
8	Not Connected	
9	Video Input 1 Ground*	
10	Video Input 2 Ground*	
11	Video Input 3 Ground*	
12	USB ID	
13	Frequency Input	
14	Frequency Return	
15	Not Connected	
16	USB D-	
17	USB D+	
18	USB 5V	
19	USB Ground	
20	USB Shield	
21	Not Connected	
22	Not Connected	
23	Not Connected	

# Mounting

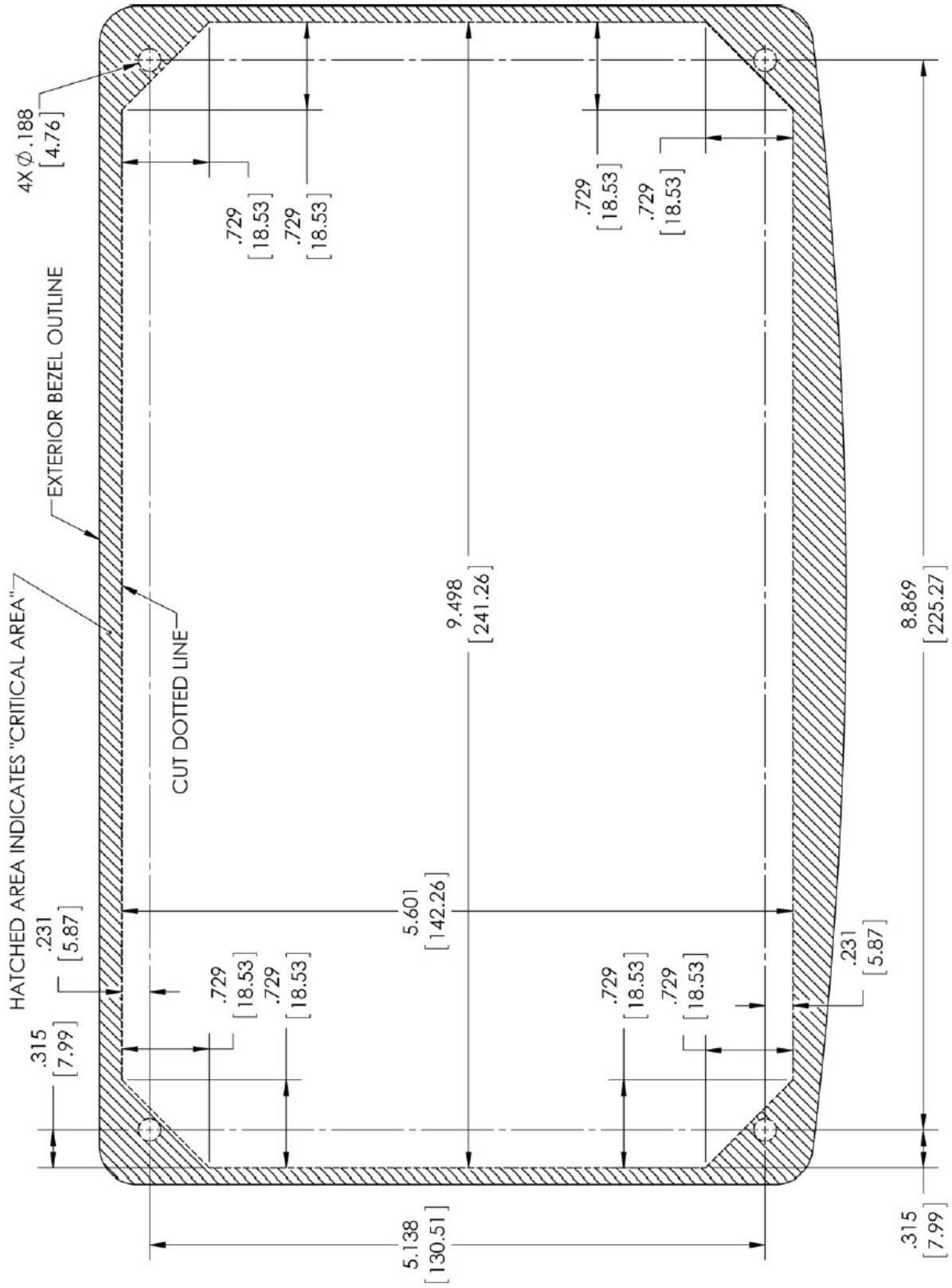


8-32 X .25" DEEP STAINLESS INSERTS  
4-PLACES



8-32 X .25" DEEP BRASS INSERTS  
4-PLACES

# Cut-outs





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