

Programmable System Controller

Configured Using HCT's Program Loader Monitor (PLM)

40 digital ON / OFF input expansion module, 1 CAN interface

Supply voltage 9-30Vdc

The DVC725 is a robust input expansion controller that receives 40 discreet inputs (ON / OFF) for hydraulic control systems. It is designed to be used as an input expansion module for the DVC700 series controllers or as a stand-alone input module using direct CAN bus communication.

- 40 discrete input (ON / OFF) expansion module
- Can be used with any J1939 CAN capable control device
- Can be combined with DVC700 series controllers as an input expansion module for large system solutions
- For systems that require many sensor switches or safety switches
- SAE J1939 or DVC DeviceNet CAN bus communication
- Rugged and fully encapsulated
- SAE J1455 environment and load dump compliant
- IP67, 69K
- CE Certified



Operational Specifications

Supply Voltage	9-30 V _{DC} (recommended operating voltage +12 to +28 V _{DC} , absolute maximum +/-32 V _{DC})
Supply Current	< 150 mA
Operating Temperature	-40 to +85°C
Storage Temperature	-40 to +100°C
Weight	1.34 lbs (0.61 kg)
Dimensions	L: 5.50 in (140 mm) x W: 4.70 in (119 mm) x H: 1.65in (42 mm)
Enclosure	Solid potted, industry standard Deutsch enclosure with automotive connectors
NEMA / IP Rating	NEMA 6P / IP67, 69K

Communication

CAN	2.0B (maximum voltage +/-14V _{DC})
	Baud rates 125 kb/s, 250kb/s, 500kb/s, 1Mb/s, software configurable
	Protocol SAE J1939, HCT DeviceNet
	Default baud rate 250kb/s
Serial Interface	RS232 (maximum voltage Rxd,RTS = +/-15V _{DC} Txd = +/-8 V _{DC})

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Inputs

Digital (Qty 40)	Discrete high/low, software configurable
Input Range	0 to +Supply, (Impedance Z > 100 KΩ)
Debounce Time	0 to 10 seconds, 10ms intervals, software configurable

NOTE: 1) Maximum voltage on any input pin +/-32 V_{DC}

Standards

Environmental	SAE J1455	Immunity	89/336/EEC, EN 61000-6-2
Temperature	Section 4.1.3.2	ESD	EN 61000-4-2
Salt Spray	Section 4.3.3.1	EMC	EN 61000-4-3
Steam Cleaning & Pressure Washing	Section 4.5.3.2	EMC	EN 61000-4-4
Vibration	Section 4.10.4.2	RF	EN 61000-4-6
Shock	Section 4.11.3.4	Emissions	89/336/EEC, EN 61000-6-4
Load Dump	Section 4.13.2.2.1.a		EN 55011

Certifications

CE

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Pin Out

30 Pin Cinch

Pin	Function
A1	N/C
A2	CAN H
A3	CAN L

D1	Input 5
D2	Input 6
D3	Input 7

G1	Input 14
G2	Input 15
G3	Input 16

K1	Input 23
K2	Input 24
K3	Input 25

Pin	Function
B1	POWER COM
B2	+ POWER IN
B3	Input 1

E1	Input 8
E2	Input 9
E3	Input 10

H1	Input 17
H2	Input 18
H3	Input 19

Pin	Function
C1	Input 2
C2	Input 3
C3	Input 4

F1	Input 11
F2	Input 12
F3	Input 13

J1	Input 20
J2	Input 21
J3	Input 22

18 Pin Cinch

a1	Input 26
a2	Input 27
a3	Input 28

d1	Input 35
d2	Input 36
d3	Input 37

b1	Input 29
b2	Input 30
b3	Input 31

e1	Input 38
e2	Input 39
e3	Input 40

c1	Input 32
c2	Input 33
c3	Input 34

f1	RXD
f2	TXD
f3	POWER COM

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Recommended Operating Parameters / Pin Functions

Uppercase letters designates the 30-pin connector.

Lowercase letters designates the 18-pin connector.

Pin	Name	Function/Features	Range
B2	Power In (Note: 1)	Positive Power Supply Input	+12V _{DC} to +28V _{DC}
B1, F3	Power Common (Note: 1)	Return for Power Supply or Signal Com	0 Volts (GND)
B3 – K3 And a1 – e3	Digital Inputs (Note: 2)	On / Off.	0 to +Supply

Notes:

1. Maximum continuous current allowed on any single connector Pin = 5 Amps
2. Input impedance, 100 KΩ with respect to Ground (0V_{DC})

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LED Diagnostic Indicators

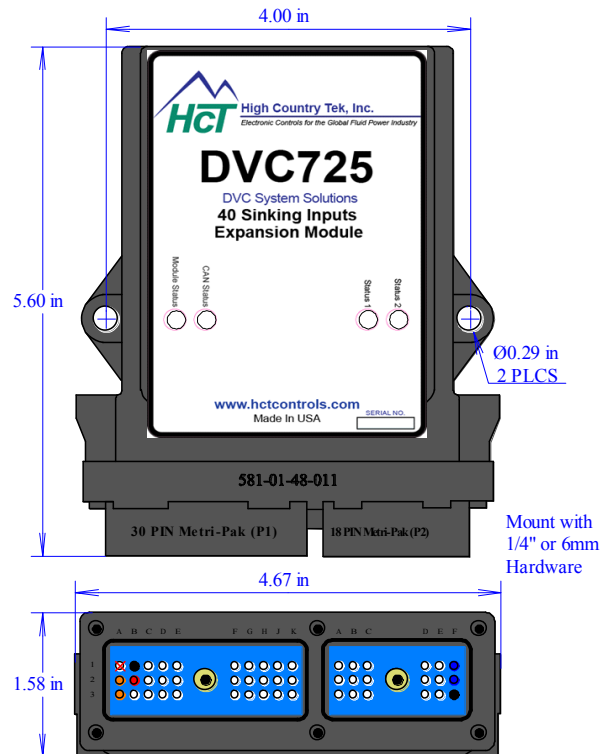
Module Status	
LED STATE	MEANING
Off	There is no power applied to the module.
On GREEN	The module is operating in a normal condition.
Flashing GREEN	Device is in standby state. May need servicing.
On RED	Module has an unrecoverable fault.
Flashing RED	Low Supply Voltage.
CAN Status	
On GREEN	Communication established with another Master Controller
Flashing GREEN	Waiting to establish communication with the Master Controller
On RED	J1939 Communications are in a timed out state
Flashing RED	The DVC Devicenet communication is in a timed-out state
Status 1	
One GREEN Flash	An input has changed its state
On GREEN	Normal operation
Status 2	
On GREEN	Normal operation

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Physical Description

Notes:

- 1) All dimensions are in Inches (Millimeters).
- 2) Use 1/4 x 20 SAE Grade 2 bolts (M6 x 1 ISO Grade 8)
 - * Torque to 4 ft-lbs (5.4 N-m) Dry
 - * Torque to 3 ft-lbs (4.1 N-m) Oiled
- 2) Mount to a flat hard surface protected from excess heat and moving parts.
- 3) Factory recommended 18-22 AWG (1.02mm to 0.64mm) TXL, XSL, and GXL automotive grade wire
- 4) Each Power pin used must be individually fused with an ATO 5, AGC 5 or smaller fuse



Connections

Module Connector - 48 Pin	Cinch 581-01-48-011
Mating Connector - 18 Pin	Delphi Packard 15492546-B
Mating Connector - 30 Pin	Delphi Packard 15492542-B
Mating Connector Pins	Delphi Packard 12103881

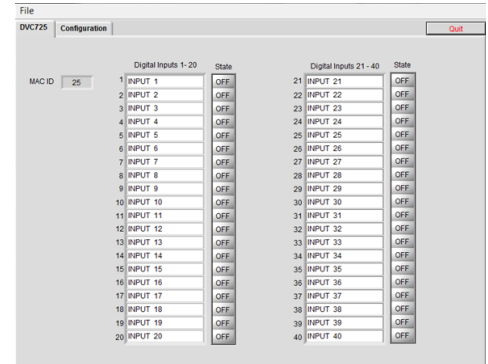
Order Guide

Part Number	Description
DVC725	40 digital ON / OFF input expansion module, 1x CAN port
999-10075	Communications Cable, multi-controller, 4-way to PC (RS232), 2m length, auto-grade
108-00119	Adapter, USB to RS232, use with 999-10075 assembly, only required if PC has no RS232 'D' ports
999-10076	Serial port adapter for program updates, 4 wires
999-10316	DVC725, 48 pin connector kit with 1x CANbus (Deutsch) connector shell + pins, and serial port adapter 999-10076, assembly required
999-10312	DVC725, 48 pin prototype harness with 1x CANbus (Deutsch), 3m length, auto grade with serial port adapter 999-10076

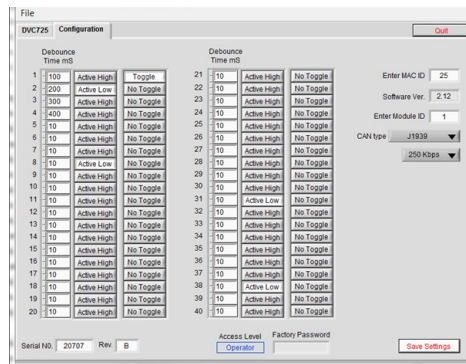
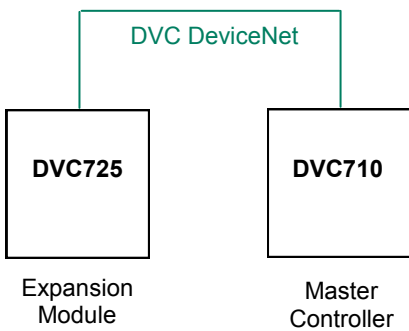
Program Loader Monitor Configuration

The DVC725 is configured using HCT's free Program Loader Monitor (PLM). The PLM is the separate graphical user interface component to the Intella Software Suite™ and can be downloaded from HCT's website. Configuration through the PLM allows the user to;

- Configure the debounce time between 0 and 10 seconds with 10 ms intervals in order to set active time limits for safety switches or to prevent false switch detection
- Select Active High or Active Low for logic ON / OFF configuration
- Select Toggle or No Toggle modes for push buttons and switch types
- Configure MAC ID, Module ID, communication rate and CAN



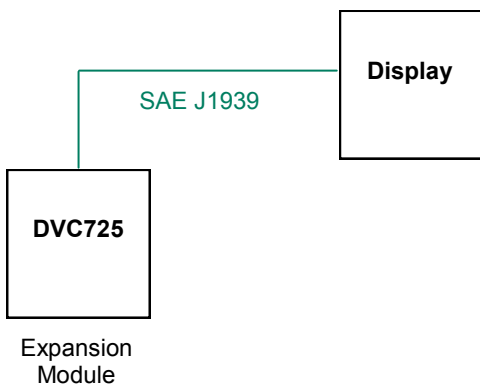
DVC725 PLM Dashboard Window



DVC725 PLM Configuration Window

Note: For more details on how to configure the DVC725, refer to the DVC725 User Manual.

Direct CAN bus Control Configuration



The DVC725 can be used with any programmable J1939 capable control unit.

- Receive switch input status directly from the DVC725 controller without needing a DVC710 or DVC707 master controller
- Configure the switch inputs directly from a CAN capable display including: debounce time, active state and toggle mode
- Monitor switch status directly from a CAN capable display for safety messages and diagnostics
- Compatible with High Country Tek's rugged displays (PV780 and PV450)

Note: For more details on how to configure the DVC725, refer to the DVC725 User Manual.

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