

Danfoss Adapter Driver Board DFA2-C3

1949 Keating Cross Rd
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SURE GRIP
CONTROLS INC.

Caterpillar ECM Compatible Driver Board with Range Adjustable

Applications

- Configured for Joystick Type Control Inputs (JM/JL Series Joysticks, Proportional Slider Modules)
- PWM Output Specifically Designed to Interface to Caterpillar ECM's

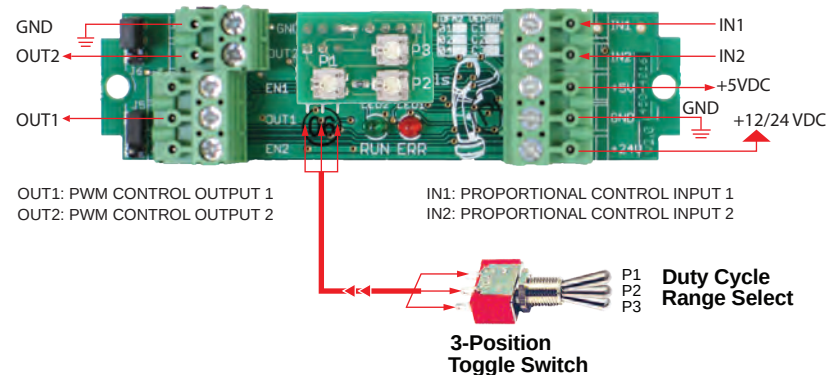
Features

- Wide Supply Range +6V to +28V
- Power Supply and Control Input Protection
- Option Board Allows User to Select between Three Adjustable Duty Cycle Output Ranges on One Output

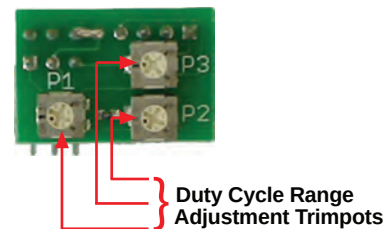
Adjustable Output

The DFA2-C3 Option Board enables the setup of three different PWM Duty Cycle Ranges on OUT1 selected by a three position switch. The range is adjusted by trimpots P1 – P3 that correspond to the position of the select switch.

Danfoss Adapter Driver Board (Part# DFA2-C3)



DFA2 Option Board



DFA2-C3 Configuration

DFA2 Connection	Parameter	Function	Operating Range			Unit
Power Supply:			Min	Typ	Max	
+12/24VDC	Supply Voltage	DFA Supply Voltage	6	12, 24	28	V
+5VDC	Input Control Device Supply Voltage	Joystick Supply Voltage	4.75	5	5.25	V
GND	Common Ground	DFA Ground, Input Control Device Ground				
Control Inputs:			V _{IN(MIN)}	V _{IN(NEUTRAL)}	V _{IN(MAX)}	
IN1	Control Input 1	Analog Proportional Input 1	0.5 (+/-0.05)	2.5	4.5 (+/-0.05)	V
IN2	Control Input 2	Analog Proportional Input 2	0.5 (+/-0.05)	2.5	4.5 (+/-0.05)	V
Control Outputs:			Range	Duty Cycle	Duty Cycle	Duty Cycle
			OUT(MIN) +/-2.5	OUT(NEUTRAL) +/-2.5	OUT(MAX) +/-2.5	
OUT1	Control Output 1	PWM Control Output 1	Max	50	95	Duty Cycle (%)
			Typ	50	80	
			Min	30	70	
OUT2	Control Output 2	PWM Control Output 2	20	50	80	Duty Cycle (%)
Enable Outputs:			Off		On	
EN1	Valve Enable Output 1	N/A				
EN2	Valve Enable Output 2	N/A				

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DFA-C3 Electrical Specifications

Symbol	Parameter	Min	Typ	Max	Unit	Notes
DFA Power Supply:						
V_S	Supply Voltage	6	12 or 24	28	V	Reverse Polarity and Transient Protected (†)
I_{SQ}	Quiescent Supply Current	25	27 or 30	35	mA	
Input Control Device Power Supply:						
V_{OUT}	Input Control Device Supply Voltage	4.75	5	5.25	V	
I_{OUT}	Input Control Device Supply current	2		30	mA	
Control Signal Inputs:		Min	Neutral	Max		
$V_{IN1,IN2}$	Control Signal Input Voltage	0.5 (+/-0.05)	2.5	4.5 (+/-0.05)	V	Inputs Transient Protected
$V_{IL(OFF)}$	Low Safety Shut-down Input Voltage		≤ 0.25		V	Input Under Voltage, Cycle Power to Reset
$V_{IH(OFF)}$	High Safety Shut-down Input Voltage		≥ 4.75		V	Input Over Voltage, Cycle Power to Reset
Control Signal Outputs:		Min	Neutral	Max		
V_{OUT1}	PWM Control Signal Output Duty Cycle Range at $V_{PEAK} = V_S$	5 (+/-2.5)	50 (+/-2.5)	95 (+/-2.5)	Duty Cycle (%)	
V_{OUT2}	PWM Control Signal Output Duty Cycle Range at $V_{PEAK} = V_S$	20 (+/-2.5)	50 (+/-2.5)	80 (+/-2.5)	Duty Cycle (%)	
$f_{OUT1,OUT2}$	PWM Output Frequency		500 (+/-5%)		Hz	Fixed PWM Frequency of 500Hz
$I_{OUT1,OUT2}$	Control Signal Output Current			10	mA	
Enable Signal Outputs:						
$V_{EN1,EN2}$	Enable Signal Output Voltage					N/A
$I_{EN1,EN2}$	Enable Signal Output Current					N/A
Environmental Specifications:						
Operating Temperature Range		-40 to +70			°C	

(†) Input transient protected up to +/- 48.4VDC @ 11.3A for pulse widths ≤ 1 ms.