

1. GENERAL INFORMATION

The decoder adapter (**Model Number: 0AC401.9**) makes it possible to handle differential signals.

The decoder adapter can be used e.g. with the DM455 digital mixed module. The adapter can be utilized as a converter for 5 V encoders (absolute or incremental) and provides +5 VDC/500 mA for encoders.

The unit can be mounted on a standard mounting rail.

2. FUNCTION

The decoder adapter creates the supply voltage for the 5 V encoder (5.25 VDC/500 mA). The supply voltage is output through a 15 pin D-type female connector. This voltage supply has been increased by 0,25 VDC to compensate voltage drops on the line.

To achieve defined operating behavior on the inputs of the B&R controller, the adapter converts the different levels 5 V to 24 V and vice versa.

Incremental Encoder

The adapter converts 5 V encoder differential signals A, B and R into 24 V single ended signals. These signals can be processed by the B&R controller (e.g. the DM455 B&R 2005 module).

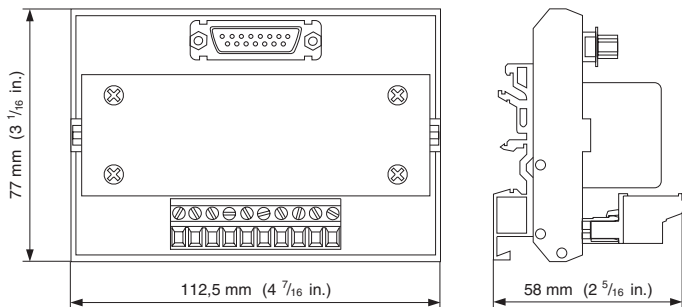
Absolute Encoder

The adapter converts the 5 V encoder differential signal D and $\bar{D}$ into a 24 V single ended signal. In the other direction, the 24 V pulse signal (e.g. from the DM455) is converted into the 5 V differential signals T and $\bar{T}$ for the encoder. These signals can be processed e.g. by the DM455.

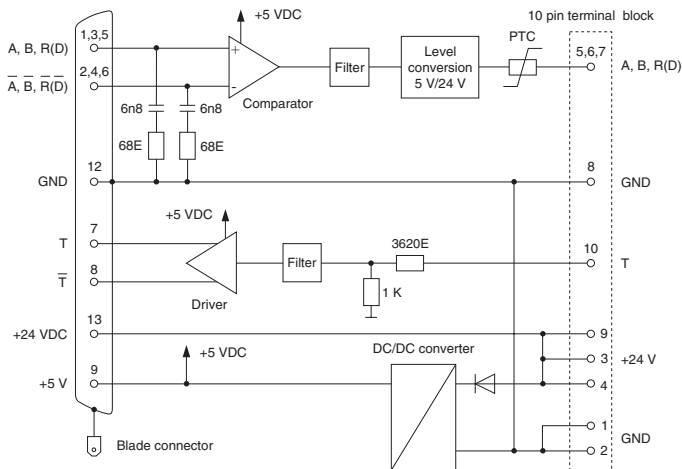
3. TECHNICAL DATA

10 pin Terminal Block	Operating Voltage Range	18 - 30 VDC
	Current Consumption at 24 V	typ. 70 mA
	Total Consumption at 24 V Encoder Supply (+5 V) Loaded with 500 mA	typ. 250 mA
	R (D), A, B Signals Output Voltage Without Load Internal Resistance Output Current	24 V $\pm$ 10 % typ. 60 Ω max. 20 mA
	Pulse Input T Switch Threshold log 0 $\rightarrow$ 1 log 1 $\rightarrow$ 0 Input Current at 24 V	$\geq$ 16 V $\leq$ 5 V typ. 5 mA
15 pin D-type Female	DC Range of Differential Inputs R (D), A, B	min. -5 V max. +10 V
	Pulse signals T, $\bar{T}$ Differential Output V. Without Load Differential Internal Resistance	typ. $\pm$ 3.5 V typ. 36 Ω
	Encoder Supply Output Voltage / Current	5.25 V $\pm$ 5 % / max. 500 mA 24 V / max. 500 mA
	Signal Delay Differential Inputs R (D), A, B after 24 V Outputs 24 V Input T after Differential Output T, $\bar{T}$	min. 0.3 μ sec typ. 0.8 μ sec max. 1.5 μ sec min. 0.15 μ sec typ. 0.5 μ sec max. 1 μ sec
	Input Frequency	max. 100 kHz
	Permissible Ambient Temperature	0 to +55 $^{\circ}$ C
	Permissible Relative Humidity	0 to 95 % non-condensing

4. DIMENSIONS

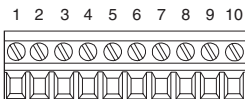


5. CIRCUIT DIAGRAM



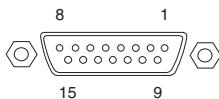
6. INTERFACES

10 pin Terminal Block



No.	Adapter Supply		Incremental Encoder		Absolute Encoder	
	Name	Descrip.	Name	Descrip.	Name	Descrip.
1	GND	Ground				
2	GND	Ground				
3	+24V	Supply Voltage IN				
4	+24V	Supply Voltage OUT				
5			R	Reference Pulse	D	Data Input
6			A	Channel A		
7			B	Channel B		
8	GND	Ground				
9	+24V	Supply Voltage OUT				
10					T	Pulse Output

15 pin D-type Female

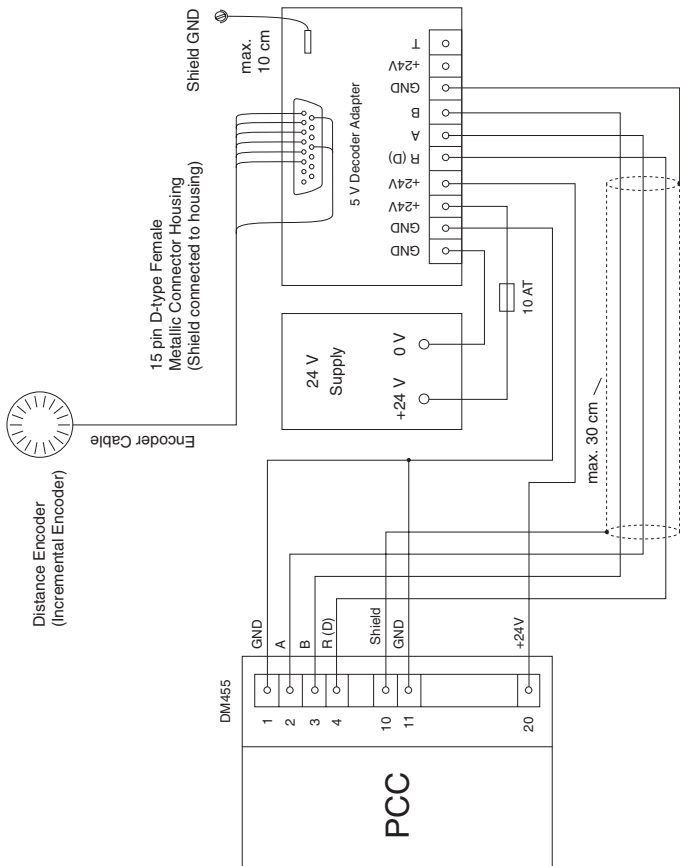


Pin	Encoder Supply		Incremental Encoder		Absolute Encoder	
	Name	Descrip.	Name	Descrip.	Name	Descrip.
1			A	Channel A		
2			$\bar{A}$	A Inverted		
3			B	Channel B		
4			$\bar{B}$	B Inverted		
5			R	Reference pulse	D	Data Input
6			$\bar{R}$	R Inverted	$\bar{D}$	D Inverted
7					T	Pulse Output
8					$\bar{T}$	T Inverted
9	+5V	Encoder Supply Pos.				
10						
11						
12	GND	Encoder Supply Ground				
13	+24V	Encoder Supply Pos.				
14						
15						

7. SUPPLY

The line to the adapter must be fused (max. 10 AT).

8.2 DIGITAL MIXED MODULE DM455 WITH INCREMENTAL ENCODER



8.3 DIGITAL MIXED MODULE DM455 WITH ABSOLUTE ENCODER

