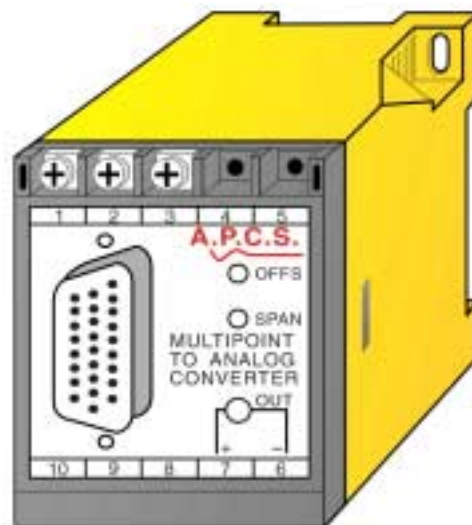



# Multipoint Digital To Analog Converter (v2) MPA166

## DESCRIPTION

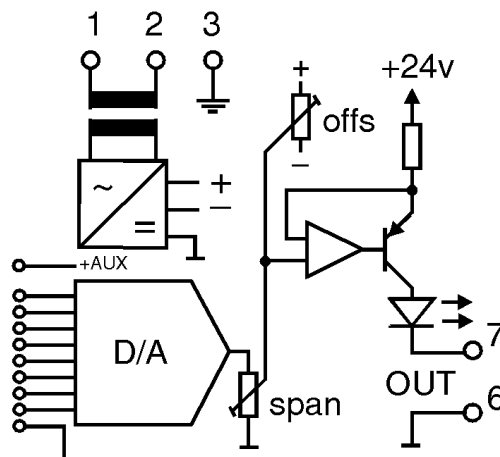
The MULTIPOINT DIGITAL TO ANALOG CONVERTER MPA166 sums up to sixteen digital inputs and converts the result into any common analogue process signal. All inputs have equal weighting as standard. Alternate input weightings are available as an option. The DC input signals can be either a voltage or current level. A 24Vdc supply is provided on the input connector to drive inputs from open collector transistors or any contact type device. The inputs are over voltage and reverse polarity protected. A filter and hysteresis are included on the input for noise rejection. Input hysteresis, trigger levels and bandwidth are fixed, other fixed levels for these parameters are available as an option. The MPA166 can be configured to be reverse acting, that is decreasing output for an increasing input. Span and offset adjustments are provided by front panel mounted 15 turn potentiometers. Each potentiometer typically covers a  $\pm 20\%$  of full-scale range; this provides great flexibility for field adjustments without the expense of built in programming hardware. A green L.E.D. on the front indicates the module is functioning and the presence of an output signal. Various power supply choices are available ranging from 240Vac down to 8Vdc; all provide power isolation except for the 3-wire version. No input to output isolation is provided in any version. (Use Signal Powered Isolator SPI232 if isolation is required).



## General Specifications

Size:	52 W x 70 H x 110 D+D-Connector (mm)
Mounting:	DIN-Rail, gear plate
Housing material:	Polycarbonate
Termination:	Input: HDD26 female connector Output: Screw terminals on front
Protection class:	IP40 (IP65 Enclosure opt.)
Weight:	0.250 kg.
Maximum input potential:	50 Vdc.
Trigger level, High:	1 Vdc.
Trigger level, Low:	0.44 Vdc.
Hysteresis:	0.56 Vdc.
Noise Rejection:	33 dB for 24V contact closure.
Bandwidth:	180 Hz for 24V contact closure.
Auxiliary Output:	24 Vdc at 20 mA.
Combined linearity and drift error:	0.5% of span.
Temperature effect:	0.01% per °C.
Operating temp. range:	-10...+60°C.
Output load effect:	less than 0.2% up to max. load.
Output loop drive:	10 mA into 0 - 1800 $\Omega$ .
Except for 3-wire versions	20 mA into 900 $\Omega$ .
	50 mA into 300 $\Omega$ .
Output loop drive:	10 mA into 0 - 1000 $\Omega$ .
3-wire version	20 mA into 0 - 500 $\Omega$ .
	50 mA into 0 - 200 $\Omega$ .
Power requirement:	ac supply 4W, dc supply 3W.
Power supply isolation:	2kV r.m.s.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1) 

## Block Diagram



For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

## TYPE NO. DESIGNATION

**MPA166 - X X XX X X X**

### Power Supply:

- |                                   |   |
|-----------------------------------|---|
| 1 = 240V, 50/60Hz $\pm 10\%$ .    | *) 6 = 8 - 60Vdc Isolated.                  |
| 2 = 120V, 50/60Hz $\pm 10\%$ .    | *) 7 = 48Vdc, (use '6').                    |
| 3 = 24V, 50/60Hz $\pm 10\%$ .     | 8 = 24Vdc $\pm 20\%$ 3-wire (not isolated). |
| *) 4 = 415V, 50/60Hz $\pm 10\%$ . | *) 9 = Other (Specify).                     |
| *) 5 = 12Vdc, (use '6').          |   |

### Type of input:

- |   |                         |
|---|-------------------------|
| 1 = Potential 1.5 to 50 volts.            | 6 = NPN (5V).           |
| 2 = Current 1 to 250 milliamps.           | 7 = PNP (24V).          |
| 3 = TTL logic level.                      | 8 = PNP (5V).           |
| 4 = NAMUR or Potential free contact (8V). | *) 9 = Other (Specify). |
| 5 = NPN (24V).                            |                         |

### Number of inputs:

- |            |             |               |
|------------|-------------|---------------|
| 03 = Three | 08 = Eight  | 13 = Thirteen |
| 04 = Four  | 09 = Nine   | 14 = Fourteen |
| 05 = Five  | 10 = Ten    | 15 = Fifteen  |
| 06 = Six   | 11 = Eleven | 16 = Sixteen  |
| 07 = Seven | 12 = Twelve |               |

### Output:

- |                                       |  |
|---------------------------------------|--|
| 1 = 0 - 5V (50k $\Omega$ min)         | 6 = 10 - 50mA (360 [200] $\Omega$ max).                |
| 2 = 0 - 10V (100k $\Omega$ min)       | 7 = 1 - 5V (50k $\Omega$ min).                         |
| 3 = 0 - 20mA (900 [500] $\Omega$ max) | 8 = 0 - 10mA (1800 [1000] $\Omega$ max).               |
| 4 = 4 - 20mA (900 [500] $\Omega$ max) | *) 9 = Other (Specify).                                |
| 5 = 0 - 50mA (360 [200] $\Omega$ max) | Note: values in [brackets] are for three wire version. |

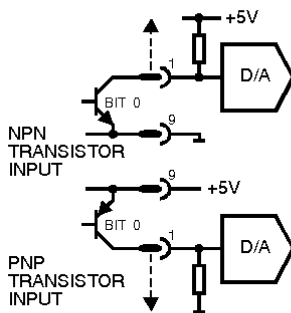
### Action:

- 1 = Direct.  
2 = Reverse.

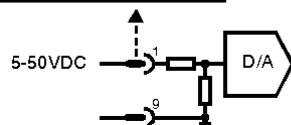
### Options:

- |                                |                                   |
|--------------------------------|-----------------------------------|
| 0 = None.                      | *) 3 = Hysteresis (Specify).      |
| *) 1 = Bandwidth (Specify)     | *) 4 = Input weighting (Specify). |
| *) 2 = Trigger level (Specify) | *) 9 = Other (Specify).           |

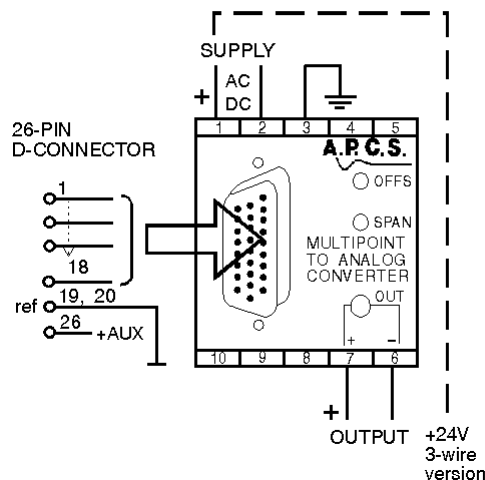
### Open Collector



### External Pulse



### Connection Diagram



\*) Price Extra.

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