# ABM4 Analogue buffer module

Overview

A module that generates 0-10V signals or reroutes existing signals optionally buffering them. Also provides terminals for power.

Typical applications include:-
- Providing test signals during commissioning.
- Buffering one 0-10V signal so that it can drive several actuators.
- Buffering four 0-10V signals so that they can drive four actuators each drawing a large signal current.
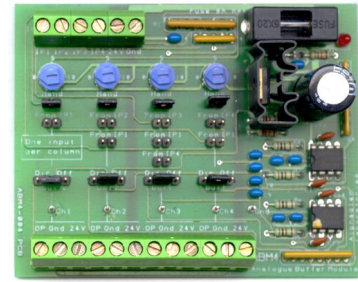
Specifications

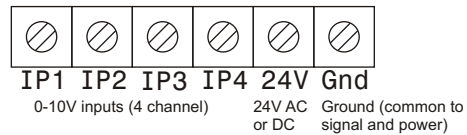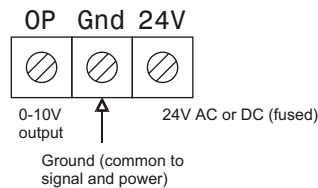| Operating characteristics	
Input signals	0-10V
Operating conditions	-10 to +50°C 0-90% RH (non-condensing)
Output	0-10V DC direct or buffered
Manual output	Screwdriver adjustment of output voltage in "Hand" position
Output signal current (max)	20mA per channel
Output power current	6A total
Input time constant	1ms
Electrical specifications	
Minimum supply voltage	21VDC or AC
Maximum supply voltage	40VDC or 27VAC
Max operating current	115mA DC
Terminal type	Rising cage connectors for 0.5-2.5mm² cable
LED status	On when powered
Mechanical details	
Dimensions	84 mm x 106mm x 70mm
Weight	127g

Features

- Four channel routing of 0-10V signals
- Hand/Off/Auto link selectable
- 0-10V signal generation manually adjustable
- Outputs can be grouped in any combination (link selectable)
- Outputs buffered or connected directly to inputs or open circuit (link selectable)
- Fused terminals for actuator power
- Rising cage terminals
- Test points for monitoring output voltages
- LED power indication
- 24V AC or DC powered

Connection diagrams

Inputs

IP1	IP2	IP3	IP4	24V	Gnd
⊘	⊘	⊘	⊘	⊘	⊘

0-10V inputs (4 channel)   24V AC or DC   Ground (common to signal and power)

Outputs

OP	Gnd	24V
⊘	⊘	⊘

0-10V output   Ground (common to signal and power)   24V AC or DC (fused)

Issue 2011/01

ABM4 Analogue buffer module

Alphaglen Laboratories Limited

Application notes

Selecting inputs

Outputs 1, 2, 3 and 4 can be linked to input 1
or
Outputs 1 and 2 can be linked to input 1 and outputs 3 and 4 can be linked to inputs 3 and 4 or both to input 4
or
Outputs 1, 2 and 3 can be linked to input 1 and output 4 can be linked to input 4
or
Output 1 can be linked to input 1, output 2 to input 2, output 3 to input 3 and output 4 to input 4

By suitable choice of inputs and links, outputs can be linked to input signals in any possible combination

Buffering outputs

When an output link is set to the **Buff** position the output signal is buffered to 20mA in both Hand and Auto modes

When an output link is set to the **Dir** position, the output signal is powered only from the input in Auto mode or from the pot in Hand mode

When the output link is set to the **Off** position, the output signal is open circuit

Hand mode

When an input link for a channel is set to **Hand**, the output voltage may be set by adjusting the associated pot.
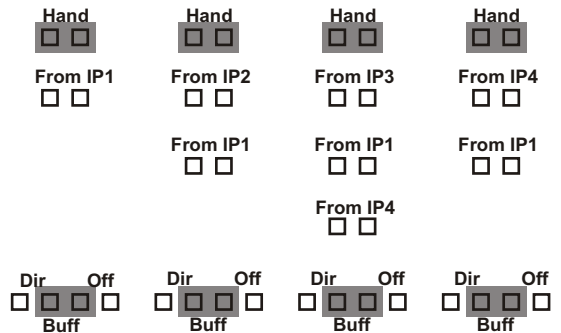
Other notes

- All the 0V terminals are common
- There must be only one link used per output channel
- Outputs can be shorted to 0V without damage but the module will overheat and fail if an output is shorted to 24V
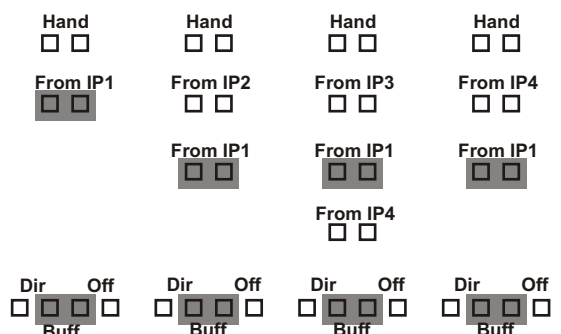
Use of output links

Direct   Buffered   Open circuit

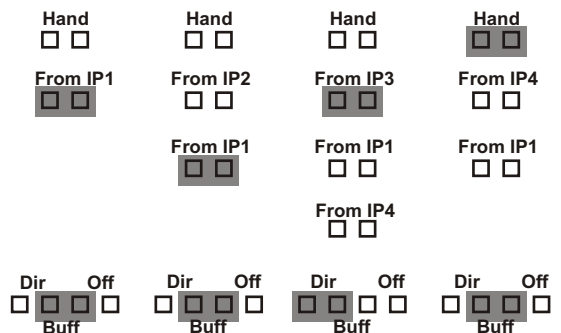## Examples of use of input links

Each output buffered and adjusted by pot:-

All outputs buffered and follow input 1:-

Outputs 1 and 2 buffered and follow input 1; output 3 not buffered and follows input 3; output 4 buffered and follows pot:-

Issue 2011/01