

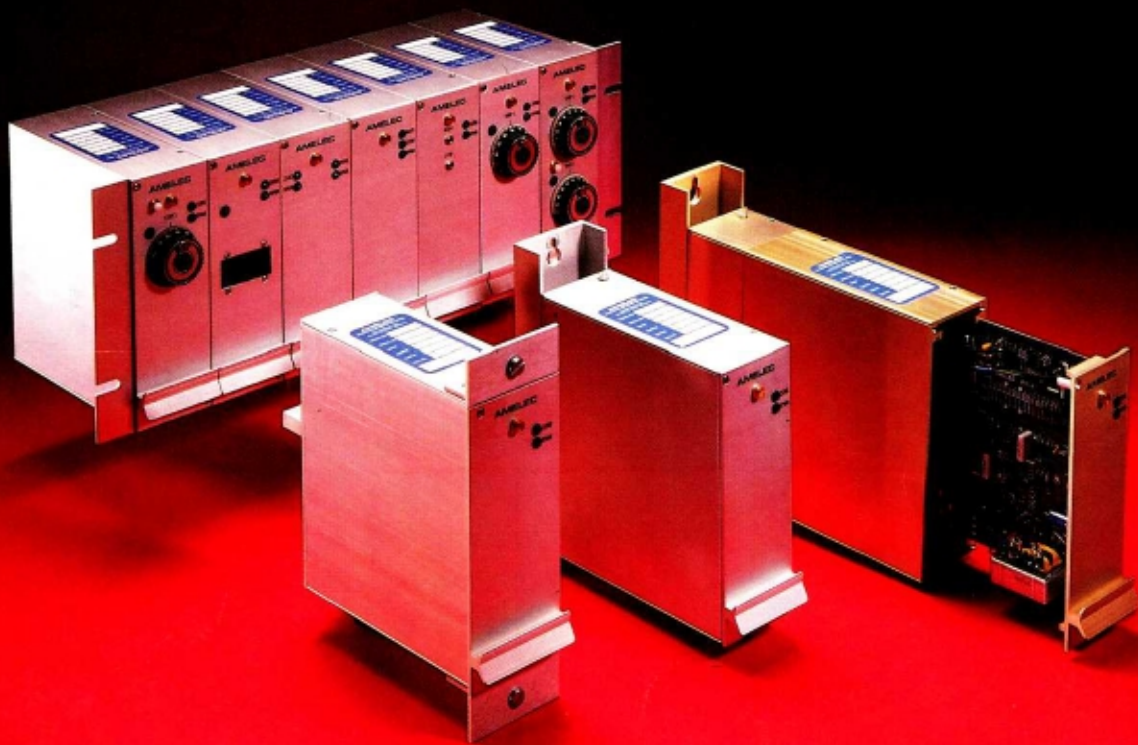
ACC Series

AMELEC

Signal  Conditioning

INDUSTRY STANDARD 'A' RANGE ACC SERIES ARITHMETIC UNITS

The range includes AMT signal transmitters, ATA trip amplifiers and AGS special products
Please see our other catalogues



- Applications include addition, subtraction, multiplication, division, linearisation and many other functions.
- Some models suitable for input from thermocouple, millivolt, RTD, slidewire, single or multiple process sources.
- Supply voltages of 120VAC, 240VAC, or 24VDC available at no additional cost. All units individually fused and front panel supply indicators fitted.
- Digital indication of input may be specified, scaled as a percentage of input span or in engineering units.
- RFI protection to BS6667, Part 3 available for all units.
- Manufactured and tested to BS5750, Part 2.
- AMELEC standard 10 year guarantee.

About Us

Originally formed in February 1975, AMELEC remains a wholly owned British manufacturing company celebrating our 35th year anniversary. In 2010 & 2011 we were awarded **100% score** in **quality** accreditation by the Achilles-UVDB verify scheme.

The instrumentation that AMELEC offers to the market place is based on analogue techniques, using readily available discrete components. The instruments contain no time dependent or microprocessor circuitry, are suitable for use in SIL 1, 2 or 3 rated safety systems/loops & all covered by up to 10 Year warranty.

Our design & everyday application engineering principles used in the instruments are based on well tried, proven in use for over thirty years, linear operational amplifier circuitry. Each instrument can be considered as a number of functional blocks assembled together to produce a specific control function.

A Signal Conditioner / Transmitter would comprise of an input circuit; a modulator / demodulator stage; an output circuit and the power supply/regulation circuitry. A trip amplifier might use the same input circuit, this time a comparator and relay driver stage plus the power supply / regulation circuitry.

By combining these functional blocks together we have produced a comprehensive range of Trip Amplifiers, Transmitters, Signal Converters / Isolators, Signal Splitters/Boosters, combined Trip Transmitters, Arithmetic (Add / Subtract / Select / Multiply / Divide) units, Power Supplies, Strain Gauge, Frequency & AC I/V Transducers, as well as Hart compatible units. The circuit building blocks we use today are essentially the same as the ones we have used for the last thirty years.

To confirm that the instruments are compliant with the latest standards, AMELEC have submitted a range of instruments with all the various circuit blocks in them to the test houses. The reference / standards used at the test houses have been:- the CEGB's EES1989, the BS6667, IEC801 and more recently the IEC61000. All instrumentation produced by AMELEC is controlled under our Lloyds approved **ISO 9001:2008 Quality system**.

Our vast client base is spread across all process industry sectors; originally to the likes of the CEGB, BNFL, GEC, British Gas, ICI, BP & Shell, today AMELEC continues to supply quality instrumentation to the Nuclear, Power Generation, Oil & Gas, Chemical, Pharmaceutical, Petrochem, Utilities, Food & Brewery sectors, as well as to many other general manufacturing industries & the Water Authorities throughout.

Here are some of our clients:



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E-mail: sales@amelec-uk.com

www.amelec-uk.com

Fax: 01908-566735

Cochran Close, Crownhill (Industry), Milton Keynes

MK8 0AJ



Client Feedback

"I recently had one of your trip amplifiers go faulty on me. The said item is at least 21 years old, and had been in service for all this time. I was really pleased when you told me that you could supply me with a direct replacement that would not need any modifications done to make it fit. It is very rare for electronic equipment not to be obsolete after a couple of years, never mind 21 years!"

In all my dealings with your company I have always been impressed with the quality of your products. The manuals provided with each item are excellent, as is your after sales technical help. I think that your 10 years warranty speaks volumes about your faith in your products. I would never hesitate I recommending your company to anyone"



"Many thanks for your prompt response.....Great Service!"



"Thanks for the fast response."



"Thank you for the great service."



"Thanks again for the prompt response."



"Thanks for your support."



"This is just what we needed, so many many thanks."



"Many thanks for your very prompt service...we thank you for helping us on this urgent request, it is much appreciated."



"Thank you very much...please say thanks to Oscar & David."



"I'd like to thank you for your quick response to our request, and for getting the item to us on time"



"I just want to say thanks to you and your staff for your speedy response and efforts, received the unit yesterday and works a treat!"

Specification

PLEASE NOTE: This specification covers all units in the range except where modified by individual instrument specification sheets.

INPUT DATA

Input source

For details see individual specification

Open circuit response

For details see individual specification.

Input impedance (Voltage Input)

>1Mohm at amplifier input. This will be shunted by burnout drive or input conditioning components.

SUPPLY DATA

Power supplies

AC models	115VAC \pm 20%
	230VAC \pm 20%
DC models	24VDC \pm 2.5V

Consumption

(Typical unit) 3VA

OUTPUT DATA

Response time

<400mSec. Unless otherwise stated.

Output signals (Analogue)

Any constant current from 0-100uA to 0-20mA (at up to 20V loop) or any constant voltage from 0-1V or 0-10V (at up to 20mA loading).

For other types of output, please see the individual instrument specification sheet.

Controls

ZERO	\pm 25%
SPAN	\pm 50%

CONDITIONS

Ambient temperature

Working	-20°C to +60°C
Storage	-40°C to +70°C

Humidity

From 5% to 95% R.H.

Vibration

1g at 15Hz to 150Hz.

ELECTRICAL STANDARDS

Insulation Input-contacts-earth-channel

1000V RMS continuous. 2000V for 20uSec. Derate to 500VDC for option 'K' enclosures.

Fusing

Power supply fused. Spare fuse mounted on PCB.

WIRING AND MOUNTING

Terminals

For conductors up to 2.5mm².

Weight

1.5kg approximately, when mounted in enclosure.

Position

Any position is acceptable, except if option 'R' is fitted, when the front panel must be vertical.

Types of mounting

Wall, panel, single end access and rack. Precision extruded aluminium construction. Standard units are Anodised, option 'K' units are 'Alochromed'.

Additional protection

Enclosures are available to NEMA 12 oiltight, NEMA 4 watertight and IP54 for N-protection.

PERFORMANCE

Series mode rejection

<0.1% error for 50Hz input at 5% of span amplitude.

Common mode rejection

<0.1% error for 250V RMS.

Temperature effect on zero

<0.02% per °C.

Temperature effect on span

<0.01% of span per °C or <0.1°C per °C, whichever is the greater.

Temperature effect on suppression/elevation

<0.02% of suppression/elevation per °C.

Supply voltage effect

<0.01% per % input change.

RFI rejection

Standard enclosures are inherently RFI proof due to their solid aluminium construction. However, for extra protection to BS6667, specify option 'K'.

Permissible input overload

mV input	20V
DC voltage input	200V
DC current input	500%
AC voltage input	200%
AC current input	500%
Resistance input	6V

ACC311, scale and bias transmitter

Models may be specified for input from thermocouple, millivolt, RTD, slidewire or process source.

When RTD or slidewire input is specified, third wire compensation is standard to reduce the effect of lead resistance. Thermocouple units have automatic cold junction compensation.

The output span may represent any portion of the input span, with control of offset and gain being either by multiturn potentiometers, accessible through the front panel, or by calibrated dials - optionally ten turn - mounted on the front panel.

Output may follow input (rising input = rising output) or have a reversed characteristic (rising input = falling output).

Many other combinations are possible since the unit is designed to be customised to suit individual applications. Please consult our Technical Sales Department for further details.

ACC312, square root extractor

This unit is designed to operate with any standard process voltage or current source.

It regards both input and output span - which need not necessarily be the same - as 0-1 and will convert 0.01 - 1 (1-100%) of input span to 0.1 - 1 (10-100%) of output span, using a square root law.

Since output accuracy is not specified below 1% input (10% output) a zero cut-off is fitted which will operate when the input moves into this region. It is normally preset to 0.5% and, while the input is between 0% and this level, the output will remain at 0%.

ACCURACY: <0.25% while input remains between 1% and 100%
 LINEARITY: <0.25% while input remains between 1% and 100%.
 RESPONSE TIME: <1Sec for the output to settle within tolerance after an input step change from 5% to 95%.

ACC313, high/low selector

This will accept up to five process voltage or current sources, which need not necessarily be of the same type but do share a common 0V.

The output span may be configured to be proportional to either the highest or lowest of these inputs; selection being by on-board link.

Input and output wiring is shown to the right. For supply wiring, please turn to page ten.

INPUT/OUTPUT WIRING

Input 1 +	1	TB1
Input 1 -	2	
Screen	3	
Input 2 +	1	TB2
Input 2 -	2	
Screen	3	
Input 3 +	12	TB3
Input 3 -	11	
Screen	10	
Input 4 +	9	
Input 4 -	8	
Screen	7	
Input 5 +	6	
Input 5 -	5	
Screen	4	
Output +	3	
Output -	2	
Screen	1	

Arithmetic units

ACC314, averager/adder/subtractor

These units will accept up to five current or voltage inputs, which need not necessarily be of the same type but do share a common 0V. These inputs may carry any sensible weighting, to suit specific requirements.

The unit may be configured to perform a wide variety of addition and subtraction functions and these are best explained with typical examples:-

- (a) $O/P = \frac{I/P1 + I/P2 + I/P3}{3}$ (b) $O/P = \frac{I/P2}{2} + \frac{I/P3}{3} + (5 \times I/P4) - I/P1$
- (c) $O/P = (.3 \times I/P1) + (.2 \times I/P2) + (.6 \times I/P3) - (.5 \times I/P4) - (.01 \times I/P5)$
- (d) $O/P = \frac{I/P2}{2} + \frac{I/P4}{4} + 0.5$

Many other combinations are possible since the unit is designed to be customised to suit individual applications. Please consult our Technical Sales Department for details. Input and output wiring is shown to the right. For supply wiring, please see page ten.

INPUT/OUTPUT WIRING

Input 1 +	1	TB1
Input 1 -	2	
Screen	3	
Input 2 +	1	TB2
Input 2 -	2	
Screen	3	
Input 3 +	12	TB3
Input 3 -	11	
Screen	10	
Input 4 +	9	
Input 4 -	8	
Screen	7	
Input 5 +	6	
Input 5 -	5	
Screen	4	
Output +	3	
Output -	2	
Screen	1	

ACC315, multiplier/divider

This will accept up to three standard voltage or current process control signals, which need not necessarily be of the same type but do share a common 0V. To suit specific applications, these inputs may carry any weighting from 10% to 200% or zero offset up to $\pm 300\%$.

Assuming equal weighting, the functions carried out by this unit are as follows:

$$\text{MULTIPLIER} = A \times B. \quad \text{DIVIDER} = \frac{A}{B} \text{ or } \frac{A}{C} \quad \text{MULTIPLIER/DIVIDER} = \frac{A \times B}{C}$$

LINEARITY:	Multiply only.	<0.2% over 20 : 1 range.
	Divide only	<0.5% over 3 : 1 range
	Multiply/divide	<1% over 30 : 1 range

Input and output wiring is shown to the right. For supply wiring, please see page ten.

INPUT/OUTPUT WIRING

Input A +	1	TB1
Input A -	2	
Screen	3	
Input B +	1	TB2
Input B -	2	
Screen	3	
Input C +	12	TB3
Input C -	11	
Screen	10	
Output +	9	
Output -	8	
Screen	7	
	6	
	5	
	4	
	3	
	2	
	1	

ACC316, high/low limiter

Models may be specified for input from thermocouple, millivolt, RTD, slidewire or process source.

When RTD or slidewire input is specified, third wire compensation is standard to reduce the effect of lead resistance. Thermocouple units have automatic cold junction compensation.

Under normal conditions, the output will follow the input. However, two additional controls are fitted to establish upper and lower limits on the output.

The HIGH limit may be adjusted over the range 40% to 100% and the LOW limit over the range 0% to 60%. Both these controls may be either blindset potentiometers accessible through the front panel or calibrated dials, optionally ten turn, mounted on the front panel.

Arithmetic units

ACC319, sample/hold transmitter

INPUT/OUTPUT WIRING

This unit is designed to operate with any standard process voltage or current source.

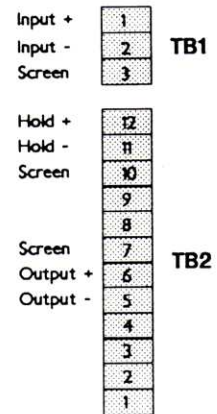
When the unit is in 'SAMPLE' mode, the output will follow the input with little or no delay but, when put into 'HOLD' mode, the output will remain at the level it was at, when put into this mode, indefinitely. Digital techniques are employed to ensure that the held output will not 'droop', no matter how long the unit is kept in this mode.

'SAMPLE'/'HOLD' control may be by normally open or normally closed contact or by normally high or normally low voltage drive of between 5V and 12V.

Control is effected with a single drive, wired to the 'HOLD' input, with the customer specifying which mode is required for which control condition.

This unit may also be supplied as a peak detector, where the output will follow the input all the while it is rising but will remain at the highest level so far attained if the input falls. When used in this mode, the 'HOLD' input acts as a 'RESET', setting the output to zero.

Input and output wiring is shown to the right. For supply wiring, please see page ten.



ACC321, lead/lag transmitter

This unit is designed to operate with any standard process voltage or current source.

When operated in 'LAG' mode, the output will follow the input with a limit on the output rate of change. This limit is digitally derived and is extremely linear.

When operated in 'LEAD' mode, if the input undergoes a step change, the output will also make a step change, in the same direction, then ramp to the new output level at the desired rate. The output step change may be set anywhere in the range 10% - 1000%.

Two separate digital ramp generators are included, each adjustable from 1 Sec to 6000 Secs for a 100% output change. It is therefore possible, in both modes, to have different rates of change for rising and falling outputs; allowing, for instance, a very slow increase of current into an actuator but a very rapid decrease in current, should the input to the unit drop.

The ACC321, in 'LAG' mode, replaces the analogue version of this product, the ACC318.

ACC322, lineariser

Models may be specified for input from thermocouple, millivolt, RTD, slidewire or process source.

When RTD or slidewire input is specified, third wire compensation is standard to reduce the effect of lead resistance. Thermocouple units have automatic cold junction compensation.

The unit is, however, most notably used to linearise the output of flow transmitters, radiation pyrometers, etc., by means of an eight break point lineariser. This will give a straight-line approximation to correct the input curve.

The same unit will generate mathematical curves, such as Sine, Cosine, square, square root and many others from a linear input drive.

LINEARITY: Better than a 10 : 1 improvement over input curve.

RESPONSE TIME: <500mSec to respond within tolerance to an input 95% step change.

Arithmetic units

ACC353, linear integrator

INPUT/OUTPUT WIRING

This unit is designed to accept input from any standard voltage or current source.

It will provide continuous integration and totalisation of quantities such as; flow, BTU, watt/hours volt/hours, etc.

Output pulses are 24V, 30mSec and are suitable for driving most electro-mechanical counters. If option 'R' is specified, output is also 30mSec pulses from a set of voltage free contacts. When this option is specified, the unit must be mounted with the front panel vertical.

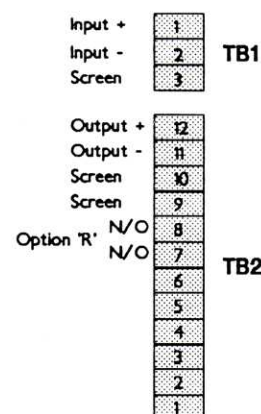
Output pulse rate is continuously adjustable from 0 - 50 to 0 - 50000 pulses per hour.

To ensure that spurious pulses are not generated at very low input levels, a zero cut-off control is fitted. This may be adjusted from 0 - 2% of input but is normally preset to .5%.

Additional options for this product- 'D6'. 6 digit resettable counter on front panel.

'D8'. 8 digit non-resettable counter on front panel.

Input and output wiring is shown to the right. For supply wiring, please see page ten.



ACC354, square root integrator

INPUT/OUTPUT WIRING

This unit is designed to accept input from any standard voltage or current source.

It will provide continuous integration and totalisation of the output of devices such as; d/p flow transmitters, etc and, since it uses a square root law, enables total flow to be displayed in engineering units,

Output pulses are 24V, 30mSec and are suitable for driving most electro-mechanical counters. If option 'R' is specified, output is also 30mSec pulses from a set of voltage free contacts. When this option is specified, the unit must be mounted with the front panel vertical.

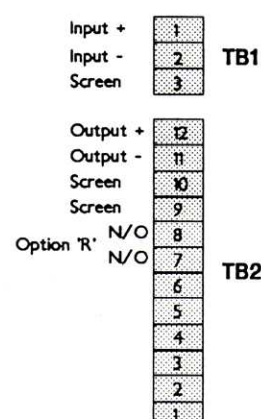
Output pulse rate is continuously adjustable from 0 - 50 to 0 - 50000 pulses per hour.

To ensure that spurious pulses are not generated at very low input levels, a zero cut-off control is fitted. This may be adjusted from 0 - 2% of input but is normally preset to .5%.

Options 'D6' and 'D8' are not available for this product.

LINEARITY: <0.25% for inputs from 1 - 100%. Below 1% input, output is not specified.

Input and output wiring is shown to the right. For supply wiring, please see page ten.



ACC355, pulse scaler

INPUT/OUTPUT WIRING

This unit will accept input from any sine, square or triangular waveform from 100Hz to 10000Hz, provided the positive peak level exceeds the threshold level.

The pulses are converted to an analogue level, optimised, then used to generate output pulses.

Output pulses are 24V, 30mSec and are suitable for driving most electro-mechanical counters. If option 'R' is specified, output is also 30mSec pulses from a set of voltage free contacts. When this option is specified, the unit must be mounted with the front panel vertical.

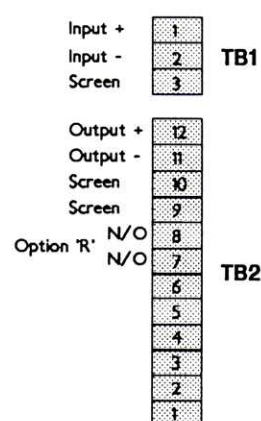
Output pulse rate is continuously adjustable from 0 - 50 to 0 - 50000 pulses per hour.

To ensure that spurious pulses are not generated at very low input levels, a zero cut-off control is fitted. This may be adjusted from 0 - 2% of input but is normally preset to .5%.

Additional options for this product- 'D6'. 6 digit resettable counter on front panel.

'D8'. 8 digit non-resettable counter on front panel.

Input and output wiring is shown to the right. For supply wiring, please see page ten.



ACC371/ACC372, rate of change

When specified as ACC371, the unit will accept input from any standard process voltage or current source.

When specified as ACC372, the unit will accept input from thermocouple, millivolt source, RTD, slidewire or potentiometer input.

When RTD, slidewire or potentiometer input is specified, third wire compensation is standard, to reduce the effect of lead resistance. Thermocouple units have automatic cold junction compensation.

The unit will monitor the rate of change of a rising or falling input ramp. This ramp may be anywhere in the range 0 - 10 Secs to 0 - 4000 Secs for a 100% change. Response time is dependant on ramp rate; the unit monitoring period being set to 1% of total ramp time.

Output may be proportional to a rising input, a falling input or both. In this latter case, the output is normally set to be 50% with no input change; rising to 100% for a maximum rate rising ramp and falling to 0% for a maximum rate falling ramp.

ACCURACY: <1%

LINEARITY: <1%

ACC374/ACC375, ramp generators

These will generate a linear output ramp in response to two inputs; one will produce a rising output and one a falling output.

These two inputs may be normally open or normally closed contacts or normally high or normally low voltage drive from TTL to 12V levels. They may also be fitted as 'RAISE' and 'LOWER' pushbuttons on the front panel.

Two modes of operation are possible. In one mode, each individual contact closure or voltage pulse will give an approximate 0.1% increase or decrease in output level. 1018 such input pulses would be required for a 100% output change.

In the second mode, an internal clock provides the individual pulses; the clock being activated and steered to the 'up' or 'down' drive by an appropriate input pulse and remaining in operation only while the input pulse is active. In this mode, the clock speed may be set for a 100% ramp from 1 Sec to 4000 Secs.

In both modes, the output will remain constant, with no 'droop', in the absence of input signals.

The ACC374, upon reaching 100% output, will 'overflow' to 0% upon receipt of a further 'RAISE' input. Similarly if at 0%, it will 'underflow' to 100% upon receipt of a further 'LOWER' input. The ACC375, however, has limits at 0% and 100% which prevents this occurring

A/D and D/A conversion

ACC376 A/D conversion

Under this generic heading, Amelec supply a wide range of A/D conversion products, including 3, 3½ and 4 digit BCD or 12, 14 and 16 bit binary. Various models offer latched output or computer interrogation.

ACC378 D/A conversion

This is also a generic heading which covers a range of 3, 3½ and 4 digit BCD or 12, 14 and 16 bit binary D/A products.

In both ranges, performance is dependant on requirements. Please ask for our A/D, D/A conversion product list.

Options

Option 'DI', digital display

This is a 3½ digit indicator which is available in 8mm red or green LED or 12mm LCD. It will display any level from -1999 to +1999 and has its own internal gain and offset controls allowing, for instance, full scale indication over a small portion of actual input span.

When this option is specified, the display will indicate input, output or other variables within the unit; these latter being read by pushbutton.

Under normal conditions, the display will indicate the input to the unit, either as a percentage of total input or in engineering units. When a pushbutton is pressed, the display will indicate that level, in the same units, allowing accurate comparison.

Available with most of the options listed below.

Option 'M', power supply

When fitted, this allows a standard unit to provide power to an external device, such as a strain gauge, input pre-amplifier or a 2-wire transmitter.

The output is adjustable over the range 2-25V at any current up to 25mA by an internal potentiometer which may, optionally, be fitted to the front panel. Load variation is better than 10mV over the full current range.

Depending on application, the output of this power supply may be wired to terminal block 2 or to unused terminals on terminal block 3. When used to power a 2-wire transmitter, the power supply output is wired internally on the unit in series with the current sensing shunt resistor, allowing full 2-wire operation.

Available with most of the options listed below.

Other options

Suffix	Description
/D6	6 Digit resettable counter. (ACC353 and ACC355 only)
/D8	8 Digit non-resettable counter. (ACC53 and ACC355 only)
/DA	Analogue indication of input or output level
/J	Input test injection jack.
/K	RFI protection to BS6667 Part 3.
/P	Calibration test point.
/R	Pulse output from mercury wetted relay. (ACC353, ACC354 and ACC355 only)

Some combinations of options are physically incompatible. If in doubt, please contact our Technical Sales.

Mounting and wiring

All the units in the range are supplied in an Anodised or Achromed extruded aluminium enclosure which may be surface or panel mounting, single end access or 7 way 19" rack.

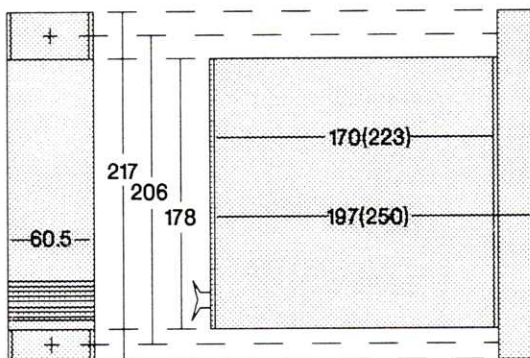
When a unit is fitted into an enclosure, the edge connector at the rear of the main printed circuit board mates with a socket which is wired to the terminal blocks. The unit is retained in the enclosure by two M3 screws which pass through countersunk holes in the front panel and into tapped holes at the front of the enclosure.

The 'U' channel terminal cover is supplied in two sizes to suit different mounting requirements. For surface mounting units, the 217mm length is supplied and includes the fixing holes. For panel, single end access or rack mounting, the 178mm length is supplied but only when options 'K' or 'EXI' are specified. When supplied, they must be replaced after wiring.

Units may be mounted at any orientation although they would normally be mounted with the front panel vertical. Surface or single end access units should not be mounted closer than 61mm horizontally or 218mm vertically. Panel units should not be mounted closer than 70mm horizontally or 234mm vertically and racks should not be mounted closer than 485mm horizontally or 189mm vertically. All types would normally be mounted further apart than this to ease wiring. At least 180mm must be left at the front of all enclosures to allow for unit withdrawal.

In the following drawings, all dimensions are in mm. Figures in brackets show the added depth of the 'K' enclosures to house the RFI protection components.

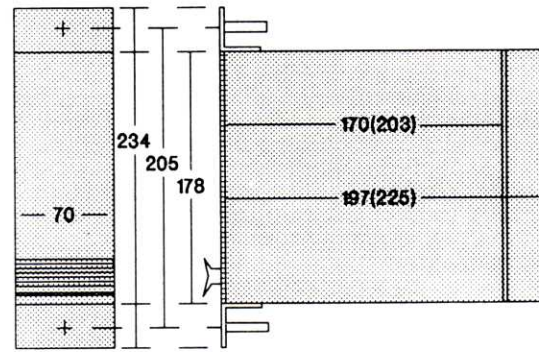
Surface mounting



Before wiring, the unit must be withdrawn from the case, which may then be removed from the 'U' channel by undoing the M4 screw at the top rear of the case, hinging the case downwards and unhooking it from the fixed peg at the lower rear of the case. This exposes the terminal blocks for wiring.

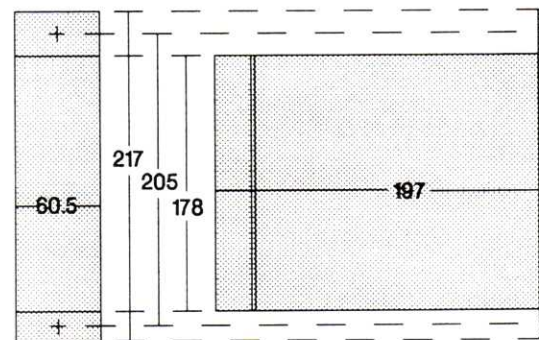
Slots are provided in the terminal plate which allow cables to be passed along the 'U' channel, through the slots and into the terminal blocks. After wiring, the enclosure may be reassembled by reversing these instructions.

Panel mounting



A 65mm wide by 190mm high aperture must be cut in the front panel with 6mm fixing holes above and below. The brackets and front panel are wider than the aperture to obscure any cut edges.

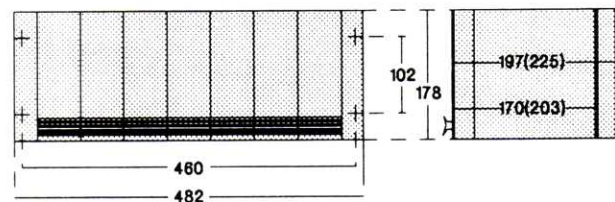
Single end access



This enclosure is not recommended for use with option 'K'

In this arrangement the terminal blocks are mounted on the front panel, although the enclosure is surface mounted. Since the terminals are on the removable part of the unit, allowance must be made, when wiring, to allow for unit withdrawal without disturbing the wiring to adjacent units or the main loom.

19" Rack mounting



Up to seven units may be mounted in a 19" rack, although other widths may be supplied to suit special requirements.

The rack is normally supplied with fixing brackets to suit panel mounting (as shown above) but may also be supplied for single end access if required.

A 179mm high by 440mm wide aperture must be cut in the panel with fixing holes on 102mm by 460mm centres.

Mounting and wiring

WIRING

Input, output and supply connections are made via leaf type terminal blocks which are mounted on the front of single end access enclosures and at the rear on all other 'A' series types. These terminal blocks will accept cables up to 2.5mm².

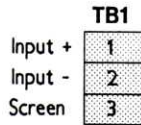
On most enclosures, other than panel mount, the terminals are separated into two groups by an earthed barrier which is part of the terminal mounting plate.

This barrier, together with the 'U' section terminal cover, ensures that input cables must enter from the top of the unit and supply/output cables from below. This helps meet the requirements of 'N' protection for intrinsically safe installations.

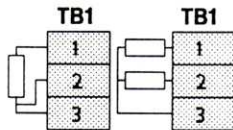
Input wiring

In many cases, particularly with multiple input units, input wiring details are given in the individual instrument specification sheets. However, many units are specified for single input from process, millivolt, RTD or thermocouple sources. Details of all types of connector are given below.

Thermocouple, millivolts, process.

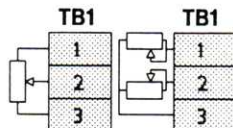


Resistance temperature sensor (RTD)



The above drawing shows the alternative wiring for single and differential input.

Slidewire or potentiometer



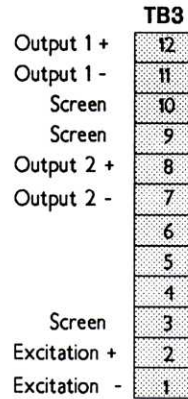
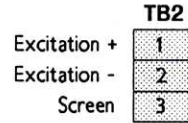
The above drawing shows the alternative wiring for single and differential input.

Input access

No matter what type of mounting is used, input wiring access is almost invariably from the left and this convention has been followed on the input drawings.

Output/excitation wiring

Where output wiring is specific to a particular product, wiring details are given in the individual instrument specification sheets. Standard output wiring is shown below.



The second output shown above is available only if specified at time of order.

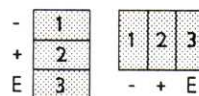
When option 'M' is specified, the excitation output may appear at either of the two alternative positions shown above.

Output access

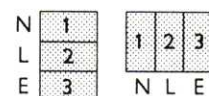
For panel, single end access or rack mounting units, output wiring access is from the right. For surface mounting units, wiring access is from the left, as shown above.

Supply wiring

DC Supply



AC Supply



Supply access

For panel, single end access or rack mounting units, output wiring access is from below. For surface mounting units, wiring access is from the left.

Additional information

Expansion to the range

The 'AH' range is still comparatively recent and is constantly being expanded. If the application you require is not covered in this catalogue, please contact our Technical Sales Department as the product may already be in process of being engineered.

AGS products

Over the years, Amelec have been called upon to solve a wide variety of process control problems. Many of the resultant products have proved so successful they have become part of our standard range. Indeed, some appear in this catalogue as standard products.

Other products, however, are specifically designed to solve a particular problem. These models do not have sufficient demand to become standard products but, since they are manufactured to the same standard, they are kept on file, ready to solve similar problems for subsequent clients.

If you have a process control problem, please ask for our shortform AGS list. Alternatively, contact our Technical Sales Department, giving full details of the problem and they will either recommend an existing AGS product or design one to suit your particular application.

Warranty and service

All Amelec products are guaranteed for ten years against faulty components or manufacture but not against misuse.

To claim under this warranty, equipment should be returned, carriage paid by the customer, to Amelec Instruments, Cochran Close, Crownhill, Milton Keynes, MK8 0AJ, together with details of the fault.

Attempted repairs or component replacement during the warranty period may render the warranty null and void, unless authorised by Amelec.

Amelec will undertake any repairs and will also supply replacement printed circuit board assemblies on an exchange price basis. Please contact the Technical Sales Department for further details.

Where the reported fault is a site problem, Amelec will make their own technical staff available to offer assistance. This service will be charged to the customer at the rate currently in force.

Ordering

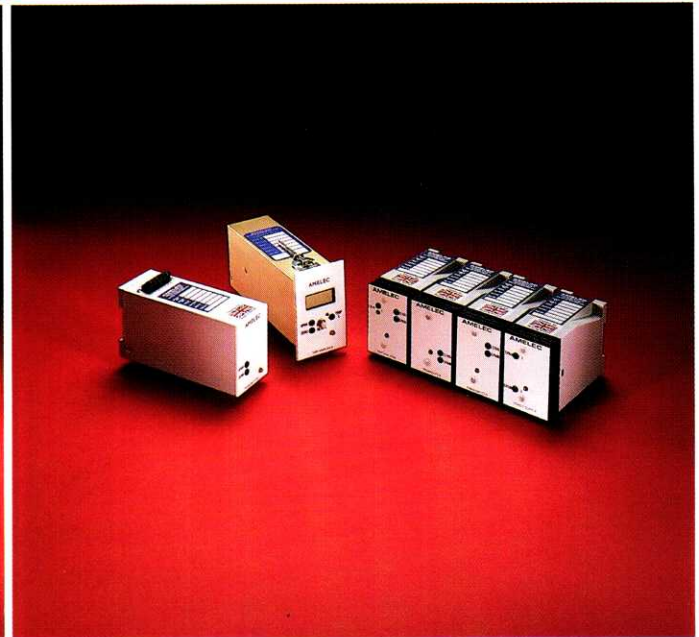
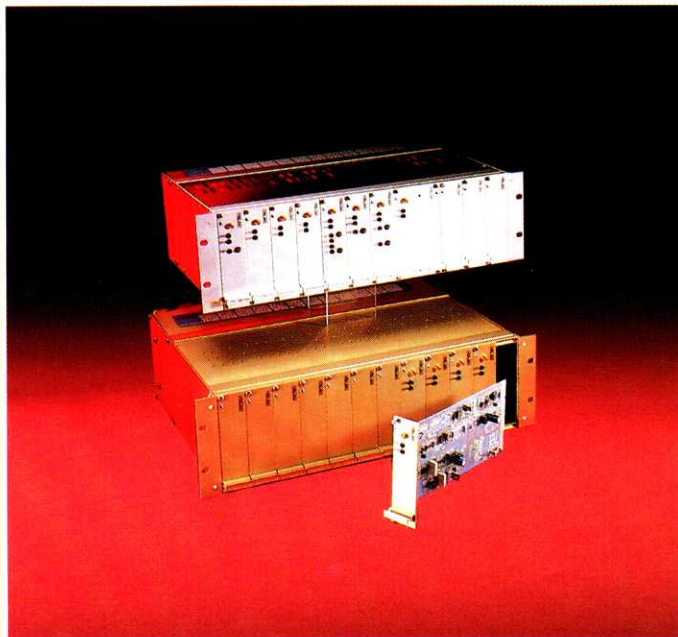
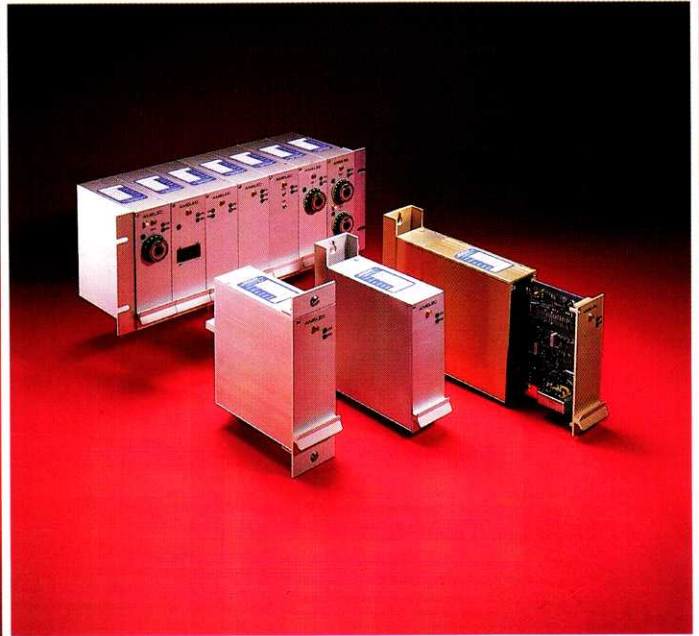
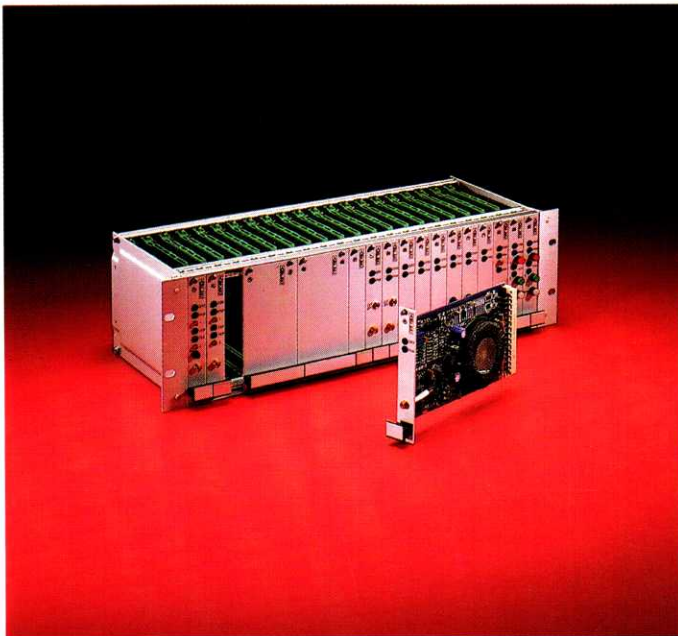
When ordering, please give the following details:-

1. Model number
2. Supply voltage and frequency
3. Mounting - Surface, Panel, Single end access or Rack
4. Input span, output span, offset and source
5. Open circuit response - If not specified, default is upscale for thermocouple, millivolt and resistance input units, downscale for process
6. Relay status and mode - If not specified, default is normally energised and single trips are set to Hi, double trips to Hi/Lo. LEDs are lit when relays are energised
7. Any options required
8. Information appropriate to any options ordered

A complete range of Trip amplifiers, Signal conditioners and Arithmetic units are also available in these complementary ranges:-

A 4U X 12E Surface, Panel, SEA and Rack **AB** 3U X 7E Rack. **AD** DIN rail and Surface. **AH** 3U X 4E Rack

Please ask for our other catalogues



Cochran Close Crownhill Milton Keynes MK8 0AJ

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