



PULSE SUMMATOR

TYPE 112 - 60

FUNCTION

This module is designed to sum together up to five digital (pulse) signals.

An optional version of the unit operates as an adder / subtractor. In this mode two outputs are provided for use with an external add / subtract counter.

DESCRIPTION

The circuit consists of up to five identical opto-isolated input stages. Input signals pass through these stages and are temporarily stored in five latches. The stored pulses are scanned out sequentially to provide the summed output pulses. The design ensures that coincident or overlapping input pulses are accepted. The adder / subtractor version permits the use of add / subtract counters which cannot accept coincident add and subtract pulses.

TYPICAL APPLICATION

One of the most common applications of this unit is the summation of integrator pulses from several flow meters. The output from this unit then being the total flow from all of the flow meters. Another use would be summation of items passing along on several conveyors into a common point.

INSTALLATION

Installation Information is given in the 112 Series General Information Sheet.

Information required When Ordering

- Amplitude, Frequency and Pulse Width of each Input Signal
- Type of Output (see specification overleaf)
- Desired Pulse Width for open collector output option.
- Summator or Adder / Subtractor Version



Features

- * *Inputs Opto-Isolated*
- * *Optional Open Collector or 24 Volt Pulse Outputs*
- * *Optional Adder / Subtractor Version*
- * *No Missing Pulses*
- * *Error Free*

SPECIFICATION

INPUTS

- a) Standard input: 24Volt pulses, must source 10mA minimum.
(Pulses of < 24 Volts can be accepted, provided that they can source 10 mA for each input).
- b) Voltage-free Contacts
- c) Other inputs may be possible e.g. Externally isolated TTL or CMOS signals.- please enquire

Note: The amplitude, frequency and pulse width of the input signals must be specified at the time of order.

ISOLATION

Standard inputs type a) above are isolated from each other and the output.
Maximum Voltage 240 V RMS or 400VDC.

INPUT FREQUENCY

The maximum permitted input frequency will depend on the number of inputs used and the required output pulse width. For an electro-magnetic counter output (60ms pulse), an output rate of 10Hz maximum is permitted. This gives a maximum of 1Hz per each of 5 inputs or 2.5Hz for 2 inputs. The relationship between input and output is given by the following formula:

$$\text{Output Rate} = \text{Maximum Input Rate} \times N \times 2$$

where N = the number of input channels.

NB: the output counter must be able to accept the output rate given by the above.

Higher input frequencies, giving a maximum output pulse rate of up to 5kHz (e.g. 2 inputs @ 1.25kHz or 5 inputs @ 0.5kHz), are available to special order.

OUTPUT OPTIONS

(the required type to be specified at time of ordering)

- a) Open Collector Transistor
b) Counter / 24Volt pulse of 60ms duration
c) Subtractor option

TEMPERATURE RANGE

Operating: -10°C to + 60°C

Storage: -20°C to + 70°C

ACCURACY

Error $\leq \pm 1$ Output Pulse

POWER SUPPLY

Standard AC and optional DC powered versions are available. Full Details of the Power Supply options appear in the 112 Series General Information Sheet.

Power Supply Indicator

A red light emitting diode is illuminated when power is supplied to the unit.

Fuse

This unit is internally fused.

WEIGHT

Approximately 0.6 kg

TERMINAL CONNECTIONS

Terminal

1	← (+)	} Input
2	⇒ (-)	} 'A'
3	← (+)	} Input
4	⇒ (-)	} 'B'
5	← (+)	} Input
6	⇒ (-)	} 'C'
7	← (+)	} Input
8	⇒ (-)	} 'D'
9	← (+)	} Input
10	⇒ (-)	} 'E'
11	⇒ + V	
12	⇒ O/P	
13	← O/P Com	
14	↔ Earth	
15	↔ Neutral	} AC Mains Supply
16	↔ Line	

Counter Output Option
(24v 60ms pulse)

Transistor Output Option
(Open Collector)

Earth Negative (-) DC Supply Option
Positive (+)

Subtractor Option Outputs

- 11 ⇒ SUBTRACT Output
12 ⇒ ADD Output
13 ← O/P Com

Please Note: Options are only available if specified at time of order.

WARNING THIS UNIT CAN BE MAINS POWERED, AND ALL INPUTS TO IT MUST BE ISOLATED FROM DANGEROUS VOLTAGES BEFORE THE FRONT COVER IS REMOVED. LIVE TERMINALS WILL BE EXPOSED.



Continuous development may necessitate changes in these details without notice

SIL

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