# MultiCon

HM2

HM4

Input modules - hourmeters

- **HM2:** 2 isolated hourmeters
- **HM4:** 4 isolated hourmeters

The HM2 and HM4 are the hourmeters modules developed for the MultiCon units. Allow to measure period of time between START and STOP signals, as well as sum of periods. These modules are ideal solution to control working time of a machinery, duration of phenomena or for maintenance purposes. They have 2 or 4 independent couters. Each counter is equipped with 2 inputs - START/STOP and PRG (programmable), which can be set as asynchronous RESET, HOLD or used as independent digital input.
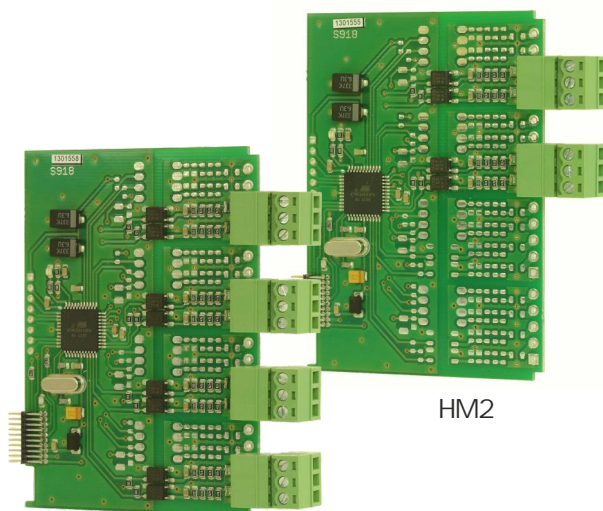
HM counters parameters are:
- Name - read-only input name given by the device,
- Unit - read-only parameter which displays measurement unit: sec.,
- Mode - read-only parameter, displays measured physical quantity: Time,
- Low Limit - value determining time, below which in logical channel „Lo" state will be displayed,
- High Limit - value determining time, above which in logical channel „Hi" state will be displayed,
- Start/Stop inp. trig. - allows to define, when the device should start or stop counting, options: high level, low level, rising edge, falling edge,
- Reset now - button allowing user to manually reset the counter,
- Reset mode - parameter allowing choose an additional resets for the counter, it has the following options: disable, from log. channel external or both,
- Reset source - this parameter is visible when Reset mode is set as from log. channel or both, it contains a list of logical channels and the chosen one will reset the counter when its value is higher than 0,
- Prog. inp. mode - specifies counter reaction on active signal appearance on Prog. input, options: binary input, reset, inhibit,
- Prog. inp. trig. - allows to define when the device should reset or inhibit time counter, options: high level, low level, rising edge, falling edge,
- Filter - sets filter on counter inputs which allows to getting rid of negative effects of signal bounces; it has the following parameters: disable, 10 ÷ 90.

MODULE PIN ASSIGNMENT

HM2
2 hourmeters

n01	← START/STOP 1
n02	← PRG 1
n03	← COM 1

n04	← START/STOP 2
n05	← PRG 2
n06	← COM 2

HM4
4 hourmeters

n01	← START/STOP 1
n02	← PRG 1
n03	← COM 1

n04	← START/STOP 2
n05	← PRG 2
n06	← COM 2

n07	← START/STOP 3
n08	← PRG 3
n09	← COM 3

n10	← START/STOP 4
n11	← PRG 4
n12	← COM 4

Pin description:
START/STOP [n] - input which starts and stops time counting,
PRG [n] :   programmable input
COM [n] :   common terminal
[n] = counter number

TECHNICAL DATA

	HM2	HM4
Number of inputs	2 hourmeters	4 hourmeters
CMC counting range	$0 - 10^9$ sec.	$0 - 10^9$ sec.
Input signals voltage levels	$\lvert Uin \rvert < 1V$ (logical LOW state) $\lvert Uin \rvert > 10V$ (logical HIGH state)	$\lvert Uin \rvert < 1V$ (logical LOW state) $\lvert Uin \rvert > 10V$ (logical HIGH state)
Max input voltage	30V	30V
Input current (typically)	14 mA @ 24V; 6 mA @ 10V	14 mA @ 24V; 6 mA @ 10V
Insulation strength	2 kV	2 kV
Precision / Temp. stability	±30 ppm @ +25°C / ±50 ppm/K	±30 ppm @ +25°C / ±50 ppm/K
Max input frequency	1 kHz	1 kHz
Protection	50 mA auto-reset fuse	50 mA auto-reset fuse
Weight	28 g	33 g
Part number	M99-HM2-001	M99-HM4-001