



catalogue



ISO 9001:2008

V05EN

The company	3
CM Series Engine Control Panel	5
CM 40 Series	
CM 20/30 Series	
CM 2A/3A Series	
CM 02 Series	
CM 60 Series	
RA Series Digital Instruments	21
RA10 Thermocouples reader	
RA20 RPM Counter/working hours counter	
RA40 Pressure and temperature reader	
CT Series Wiper Control Systems	29
CT41	
CT42	
CT41P	
CT42P	
CT43P	
CT44P	
CT45P	
CT2N2	
CT2N3	
CT2N4	
CT2N5	
CT2N6	
CTMOD	
I / O boards	57
RB01S1	
RB01C1	
Accessories	60

the company



The company **Pine S.r.l.**

PINE S.r.l. was founded in 1993 introducing the first microprocessor control integrated system to marine diesel engine.

Our primary target is to supply products designed for nautical (professional, military, and leisure) and industrial applications, able to satisfy reliability and quality requirements expected.

Technologically advanced solutions, wide experience and know-how, allow to design marine application systems, and on request, in accordance with Marine Register specifications.

Thanks to a high level service, reliability, quality and customer service, PINE S.r.l. sells products in the world wide market. An assistance service based on local companies help customers on the first installation and on the aftermarket.



Series

CM

Engine Control Panels





CM40

CM40 is a digital engine control panel suitable for low power engines. Small sizes make it ideal for dashboards where space is one of the most important needs, without giving up the main engine basic readings. CM40 can be installed on the dashboard or on a electric board protecting the back against water. Control and visualization parts are protected by a polycarbonate front mounted on an aluminum support.

Standard Features

Visualization

Four readings in a 4-digits 7-segments display:

- RPM
- Working hours
- Battery voltage
- Water temperature

Five warning lamps for signalings and alarms:

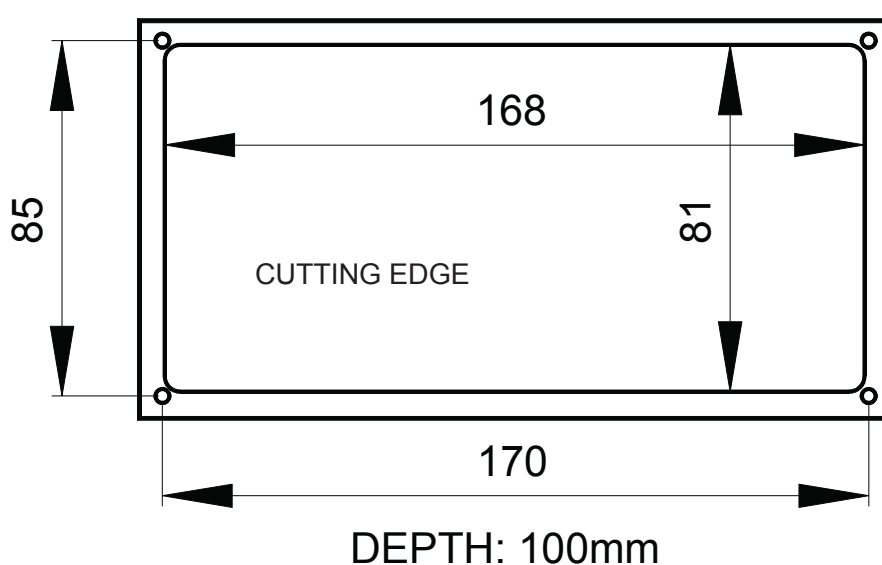
- High water temperature
- Low oil pressure
- Alternator
- Preheating
- Low battery

Variable brightness intensity

On request

- Automatic stop
- Automatic stop selector (override)
- Pre-heating management
- Oil pressure or Fuel level instead of Water temperature
- Remote alarm/signalling acknowledgment input
- Smart painted metal box , fixed by four anti-vibration supports.

Power supply	12V	24V
Power consumption	< 4 W	
Protections	Polarity inversion Battery disconnecting extravoltage (not repetitive)	
Working temperature	-10 °C / +60 °C	
Storage temperature	-30 °C / +70 °C	
Visualization	4-digits 7-segments led display	
Acoustic signalling	Buzzer 5 – 30 Vcc	
Inputs	2 analog and 6 digital	
Outputs (on request)	Automatic engine stop Preheating	
Engine revolution	Alternator "W" contac	
Temperature reading	Veglia, VDO	
Size (mm)	185 x 98 x 100	



CM20/CM30



CM20 / CM 30 are digital panels suitable for mid-power engines. They represent the ideal solution when all engine basic readings have to be monitored. Inputs are compatible with the most common commercial transducers. CM20 / CM30 can be installed on the dashboard or on a electric board protecting the back against water. Control and visualization parts are protected by a polycarbonate front mounted on an aluminum support.

Standard Features

Visualization

Six readings in 1x4-digits, 2x3-digits 7-segments display:

- RPM
- Working hours
- Battery voltage
- Water temperature
- Fuel level
- Engine Oil pressure

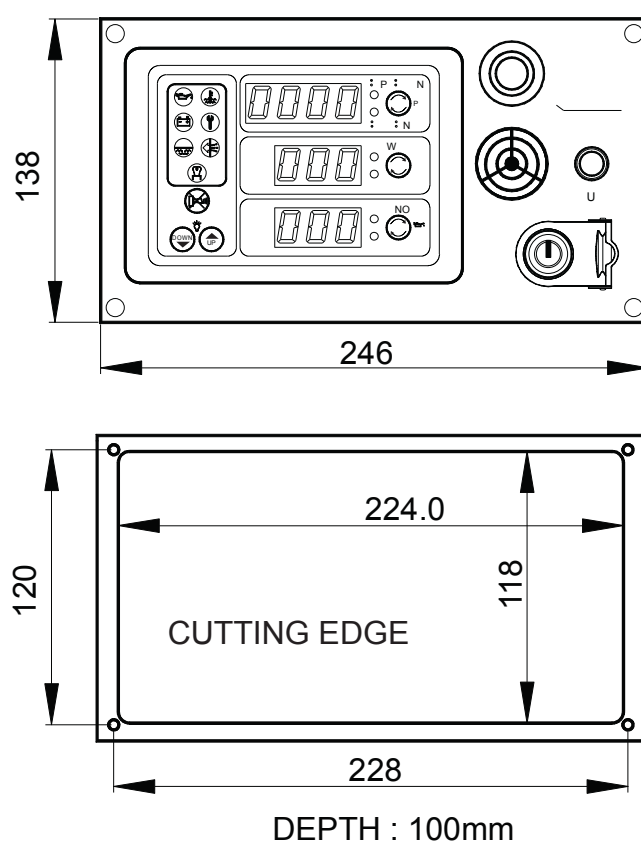
Seven warning lamps for signalings and alarms:

Low oil pressure
High water temperature
Alternator
Low battery
Alarm 1
Low fuel level
Preheating (only on request)
Variable brightness intensity

On request

Automatic stop
Automatic stop selector (override)
Acoustic alarm remote repeating
Remote alarm/signalling acknowledgment input
Pre-heating management
Two or more panels connected together for a control Multi-Station
The monitoring unit can be supplied apart
Painted metal enclosure box, fixed by four anti-vibration supports

Power supply	12V	24V
Power consumption	< 6 W	
Protections	Polarity inversion Battery disconnecting extra-voltage (not repetitive)	
Working temperature	-10 °C / +60 °C	
Storage temperature	-30 °C / +70 °C	
Visualization	3 rows display and variable luminous intensity	
Acoustic signalling	Buzzer 5 – 30 Vcc	
Inputs	3 analog and 6 digital	
Outputs (on request)	Automatic engine stop Preheating	
Engine revolution	Alternator "W" contact	
Temperature reading	Veglia, VDO	
Size (mm)	246 x 138 x 100	



CM2A/CM3A



CM2A / CM3A are programmable digital control panels suitable for mid-power engines.

They represent the ideal solution when all engine basic readings have to be monitored.

User can adjust pre-alarm and alarm thresholds for each reading.

Inputs are compatible with the most common commercial transducers.

CM2A / CM3A can be installed on the dashboard or on a electric board protecting the back against water. Control and visualization parts are protected by a polycarbonate front mounted on an aluminum support.

Standard Features

Visualization

Six readings in 1x4-digits and 2x3-digits 7-segments display:

- RPM
- Working hours
- Maintenance / Oil change timer management
- Water temperature
- Engine Oil pressure
- Battery voltage

Seven warning lamps for signalling and alarms:

Low oil pressure

High water temperature

Alternator

Maintenance / Oil change

Alarm 1

Alarm 2 (only CM3A)

Preheating (only on request) / Alarm 3

Variable brightness intensity.

On request

Automatic stop

Automatic stop selector (override)

Acoustic alarm remote repeating

Remote alarm/signalling acknowledgment input

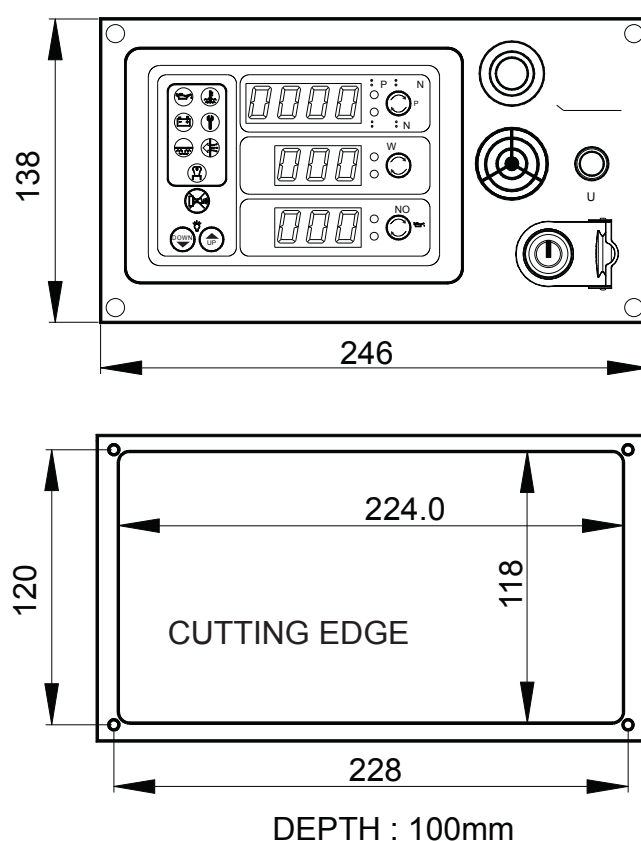
Pre-heating management

Two or more panels connected together for a control Multi-Station

The monitoring unit can be supplied apart.

Painted metal enclosure box, fixed by four anti-vibration supports.

Power supply	12V	24V
Power consumption	< 6 W	
Protections	Polarity inversion Battery disconnecting extra-voltage (not repetitive)	
Working temperature	-10 °C / +60 °C	
Storage temperature	-30 °C / +70 °C	
Visualization	3 rows display and variable luminous intensity	
Acoustic signalling	Buzzer 5 – 30 Vcc	
Inputs	3 analog and 6 digital	
Outputs (on request)	Automatic engine stop Preheating	
Engine revolution	Alternator "W" contact or magnetic pick-up	
Temperature reading	Veglia, VDO	
Size (mm)	246 x 138 x 100	





CM02

CM02 is a fully programmable digital control panel suitable for mid-power and high power engines.
 A polycarbonate front mounted on an aluminum support protects control and visualization parts.
 Two independent electronic control units assure reliability and safety giving at the same time modularity to the product.
 User can adjust pre-alarm and alarm thresholds for each reading.

Standard Features

Visualization

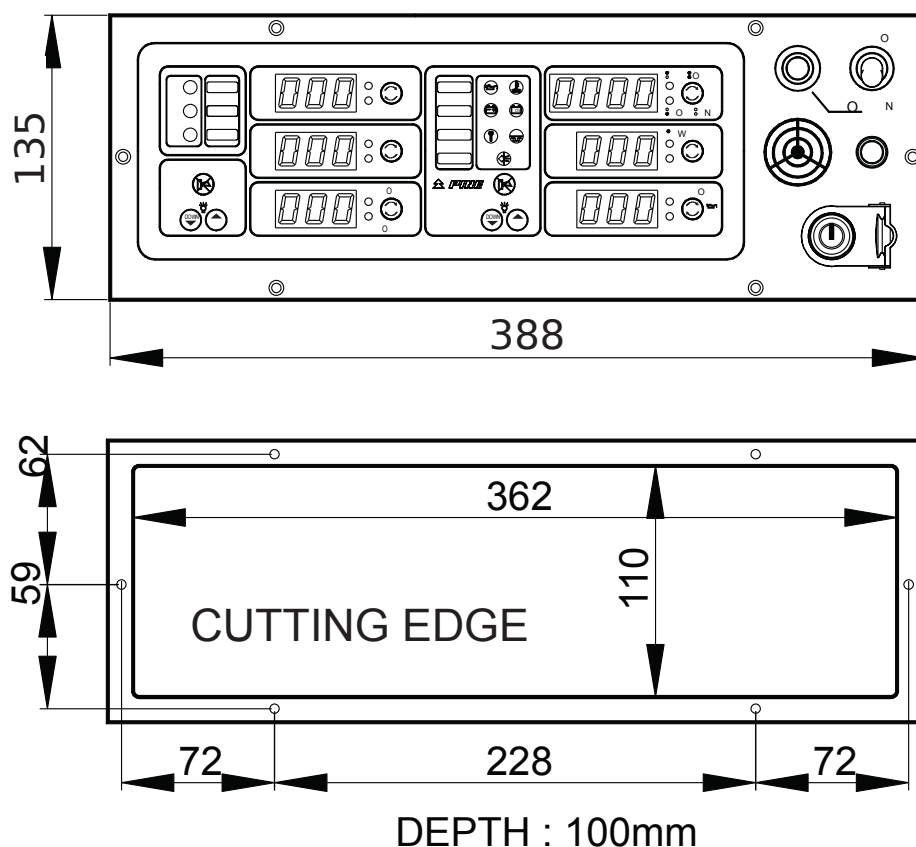
Fourteen readings in a 7-segments led display (5x3-digits 1x4-digits):

- RPM
- Working hours
- 8 analog readings
- Maintenance / Oil change timer management
- One or two exhaust gas temperatures
- Ten warning lamps for signalings and alarms
- Variable brightness intensity

On request

- Automatic stop
- Acoustic alarm remote repeating
- Remote alarm/signalling acknowledgment input
- Pre-heating management related to the engine water temperature
- Two or more panels connected together for a control Multi-Station
- The monitoring unit can be supplied apart.
- Painted metal enclosure box, fixed by four anti-vibration supports.

Power supply	12V / 24V
Power consumption	< 10 W
Protections	Polarity inversion Battery disconnecting extra-voltage (not repetitive)
Working temperature	-10 °C / +60 °C
Storage temperature	-30 °C / +80 °C
Visualization	3+3 rows display and variable luminous intensity
Acoustic signalling	Buzzer 5 – 30 Vcc
Inputs	8 analog and 6 digital
Outputs (on request)	Automatic engine stop Preheating
Engine revolution	Alternator "W" contact or magnetic pick-up
Temperature reading	Veglia, VDO, 4-20 mA and other on request
Size (mm)	388 x 136 x 100



CM61



Fully programmable digital control panel suitable for low-power and mid-power engines.

Visualized readings and alarms management are fully customizable.

It reads signals from analogue transducers, ON/OFF contacts, CANBUS and RS485 serial buses.

CM61 can perform the automatic engine start and stop, therefore can be used on gen-sets.

The monochromatic **display is readable** in every environmental condition, even in **full sunlight**.

CM61 records all the significant events, similar to a "black box".

Standard Features

Visualization

High contrast monochrome LCD sun light readable

6+6 analogue readings displayed

8+8 icons/warning-lights for alarms/safeties/faults signalling

Two text rows dedicated to messages display

Manual adjustment of brightness and contrast

5 output relays with selectable function

Automatic stop

Acoustic alarm remote repeating

Remote alarm/signalling acknowledgment input

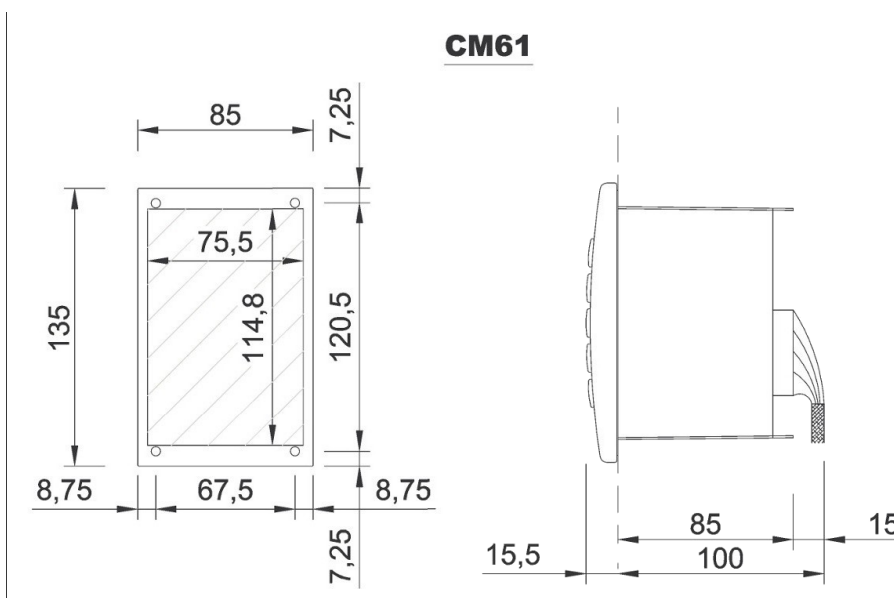
Pre-heating management related to the engine water temperature

Two or more panels connected together for a control Multi-Station

On request

Painted metal enclosure box, fixed by four anti-vibration supports.

Power supply	12V / 24V
Power consumption	< 7 W
Protections	Polarity inversion Battery disconnecting extra-voltage (not repetitive)
Working temperature	-10 °C / +60 °C
Storage temperature	-30 °C / +80 °C
Visualization	Transflective Backlit LCD display 128 x 64 dots
Acoustic signalling	Buzzer 5 – 30 Vcc
Inputs	5 analog and 8 digital
Serial lines	CANBUS and RS485
Outputs (on request)	System ready 5 Relays Buzzer Alternator excitation Tachometer power supply Tachometer back-lighting
Engine revolution	Alternator “W” contact Magnetic pick-up Reading from CANBUS (J1939) or customized messages
Temperature reading	All the common transducers and 4-20 mA
Size (mm)	85 x 135 x 100





CM62

Fully programmable digital control panel suitable for low-power and mid-power engines.

Visualized readings and alarms management are fully customizable.

It reads signals from analogue transducers, ON/OFF contacts, CANBUS and RS485 serial buses.

CM60 can perform the automatic engine start and stop, therefore can be used on gen-sets.

The monochromatic **display is readable** in every environmental condition, even in **full sunlight**.

CM60 records all the significant events, similar to a "black box".

Standard Features

Visualization

High contrast monochromatic LCD sun light readable

6+6 analogue readings displayed

8+8 icons/warning-lights for alarms/safeties/faults signalling

Two text rows dedicated to messages display

Manual adjustment of brightness and contrast

5 output relays with selectable function

Automatic stop

Acoustic alarm remote repeating

Remote alarm/signalling acknowledgment input

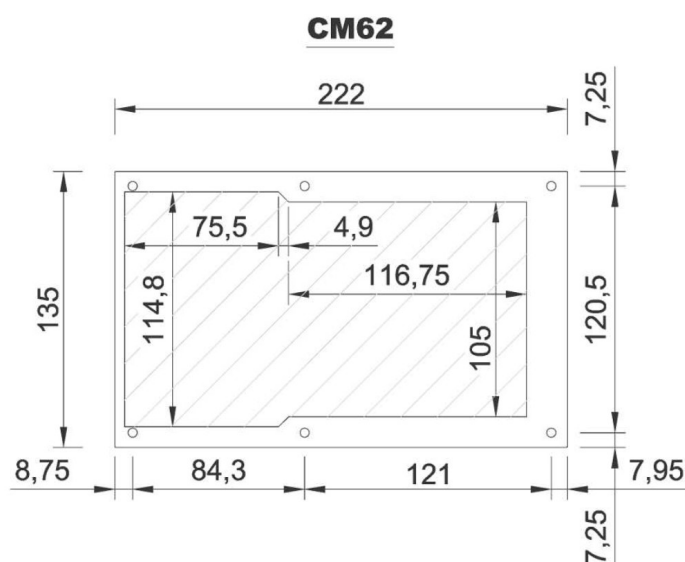
Pre-heating management related to the engine water temperature

Two or more panels connected together for a control Multi-Station

On request

Painted metal enclosure box, fixed by four anti-vibration supports.

Power supply	12V / 24V
Power consumption	< 7 W
Protections	Polarity inversion Battery disconnecting extra-voltage (not repetitive)
Working temperature	-10 °C / +60 °C
Storage temperature	-30 °C / +80 °C
Visualization	Transflective Backlit LCD display 128 x 64 dots
Acoustic signalling	Buzzer 5 – 30 Vcc
Inputs	5 analog and 8 digital
Serial lines	CANBUS and RS485
Outputs	System ready 5 Relays Buzzer Alternator excitation Tachometer power supply Tachometer back-lighting
Engine revolution	Alternator “W” contact Magnetic pick-up Reading from CANBUS (J1939) or customized messages
Temperature reading	All the common transducers and 4-20 mA
Size (mm)	222 x 135 x 100





CM63

Fully programmable digital control panel suitable for low-power and mid-power engines.

Visualized readings and alarms management are fully customizable.

It reads signals from analogue transducers, ON/OFF contacts, CANBUS and RS485 serial buses.

CM60 can perform the automatic engine start and stop, therefore can be used on gen-sets.

The monochromatic display is readable in every environmental condition, even in full sunlight.

CM60 records all the significant events, similar to a "black box".

Standard Features

Visualization

High contrast monochromatic LCD sun light readable

6+6 analogue readings displayed

8+8 icons/warning-lights for alarms/safeties/faults signalings

Two text rows dedicated to messages display

Tachometer

Manual adjustment of brightness and contrast

5 output relays with selectable function

Automatic stop

Acoustic alarm remote repeating

Remote alarm/signalling acknowledgment input

Pre-heating management related to the engine water temperature

Two or more panels connected together for a control Multi-Station

On request

Painted metal enclosure box, fixed by four anti-vibration supports.

Power supply	12V / 24V
Power consumption	< 7 W
Protections	Polarity inversion Battery disconnecting extra-voltage (not repetitive)
Working temperature	-10 °C / +60 °C
Storage temperature	-30 °C / +80 °C
Visualization	Transflective Backlit LCD display 128 x 64 dots
Acoustic signalling	Buzzer 5 – 30 Vcc
Inputs	5 analog and 8 digital
Serial lines	CANBUS and RS485
Outputs	System ready 5 Relays Buzzer Alternator excitation Tachometer power supply Tachometer back-lighting
Engine revolution	Alternator “W” contact Magnetic pick-up Reading from CANBUS (J1939) or customized messages
Temperature reading	All the common transducers and 4-20 mA
Size (mm)	335 x 135 x 100

RA Series

D i g i t a l
G a u g e s



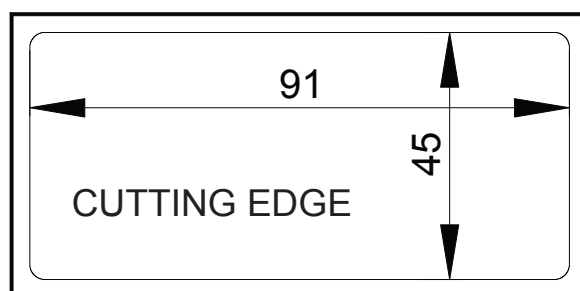
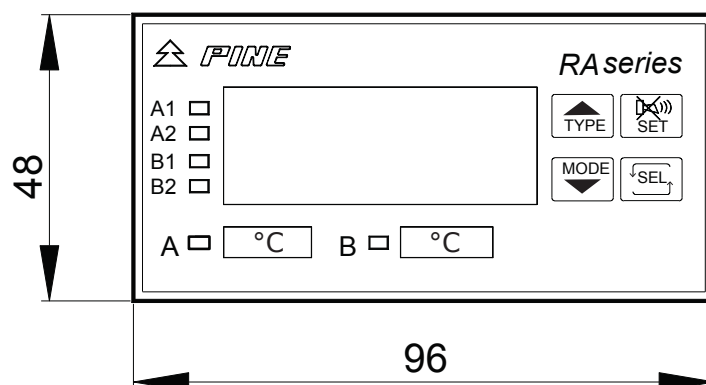
RA10



RA10 is a programmable unit, fit for systems where high temperatures have to be monitored. It reads temperature digitally by **K** or **J** type thermocouples, galvanically isolated. It is provided with a 12 bit A/D converter, with adjustable offset and slope (gain) for high precision readings.

RA 10 Thermocouple reader

Power supply	12V / 24V
Power consumption	< 200mA 12V <100mA 24V
Working temperature	-5 °C / +60 °C
Thermocouples	K type J type
K type range of measure	0 - 990 °C
J type range of measure	0 - 750 °C
Accuracy	+/- 2 °C
Resolution	1°C
Alarms	Two adjustable threshold for each alarm LED signaling Buzzer
Relay output	SPDT type, $I_{\max} = 2A$ res. / $V_{\max} = 50 V$
Temperature reading	All the common transducers and 4-20 mA
Size DIN 43700(mm)	48 x 96 x 120



DEPTH : 120mm

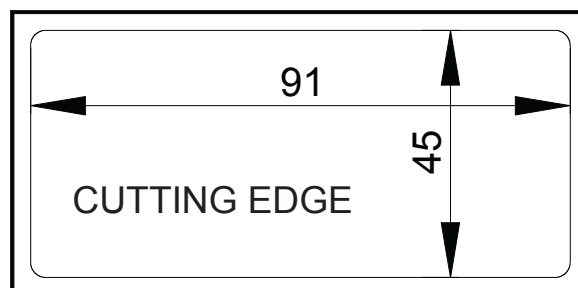
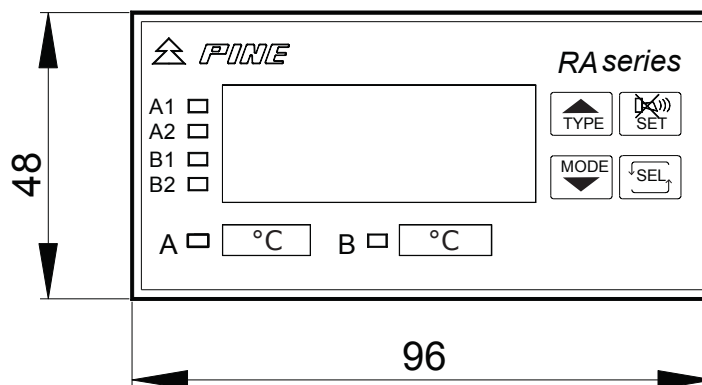
RA20



RA20 is a programmable unit, fit for systems where high precision engine revolutions reading and engine management are required. Input signal is provided by alternator "W" contact or coming from the most common transducers (magnetic pick-up on crowned wheel or PNP and NPN proximity switches). Working Hours alarm is used for maintenance or oil change management. Instrument can be set to read very low RPM, also displayed with a decimal digit.

RA 20 RPM / Working Hours Counter

Power supply	12V / 24V
Power consumption	< 200mA 12V <100mA 24V
Working temperature	-5 °C / +60 °C
Range of measure	From 1 to 50000 RPM
Accuracy	<1 at 6000 RPM
Resolution	1 or 10 RPM
Accuracy	+/- 2 °C
Max input frequency	5 KHz for PNP and NPN 10 KHz for "W" contact 20 KHz for magnetic pick-up
Alarms	Two adjustable threshold for each alarm LEDs signalings Buzzer Buzzer repeating or A1 alarm repeating (A2 disabled)
Relay output	SPDT type, $I_{\max} = 2A$ res. / $V_{\max} = 50 V$
RPM calibration	00.01 - 39.99 (1 step = 0.01) 40 - 500 (1 step = 1)
Size DIN 43700(mm)	48 x 96 x 120



DEPTH : 120mm

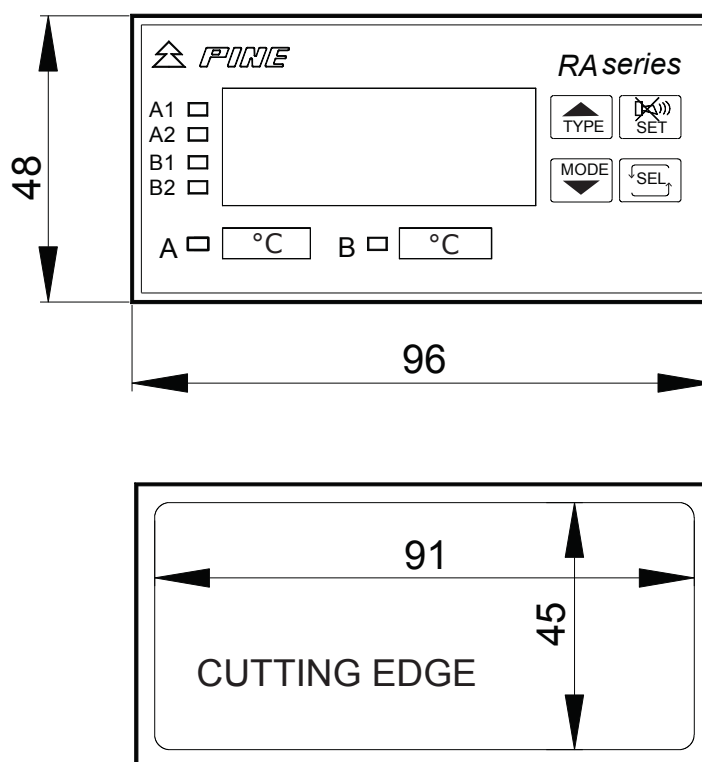
RA40



RA40 is a programmable unit, fit for systems where high precision readings have to be monitored.
 Input signals can come from any kind of marine transducer or with 4-20 mA standard.
 Instrument can be set up to work as thermostat and pressure switch.

RA 40 Pressure and Temperature Reader

Power supply	12V / 24V
Power consumption	< 200mA 12V <100mA 24V
Working temperature	-5 °C / +60 °C
Available alarms	Two adjustable threshold for each alarm LED signalings Buzzer SPDT output pins (on request)
Relay output	SPDT type, $I_{\max} = 2A$ res. / $V_{\max} = 50 V$
Scale proportional adjustment	+/- 25 % starting from default set
Size DIN 43700(mm)	48 x 96 x 120



CT Series



W i p e r
C o n t r o l
S y s t e m



CT61

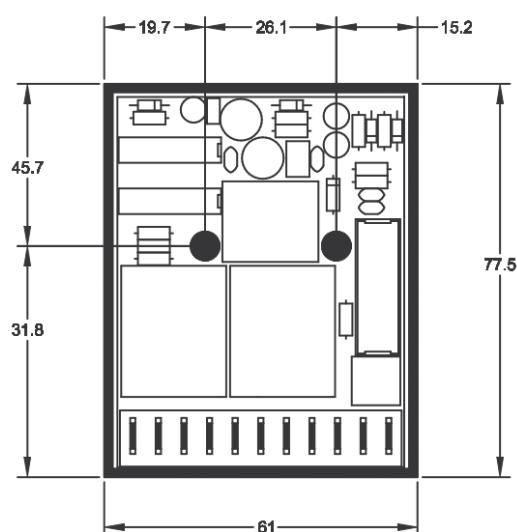
CT61 is a microcontroller-based control unit for one wiper. It manages both single speed and double speed motors. All functions are performed by a DPDT (double pole, double throw) momentary switch (not provided) with neutral position (On – Off – On).

Features

- four intermittent speeds
- one or two continuous speeds
- synchronized brushes at any mode
- motor brake
- washing program

Power supply	12V (CT611) / 24V (CT612)	
Max protection fuses	10 A time-delay	6,3 A time-delay
Power consumption	< 6 W	
Protection	Polarity inversion	
Working temperature	-10 °C / +60 °C	
Storage temperature	-30 °C / +70 °C	
Motor	Single/Double speed 150 W maximum power	
Inputs	Double button with neutral position (On – Off – On) Parking switch signal (negative)	
Outputs	Motor low speed, motor high speed Washing pump command (positive) Status LED command	

CT61



CT41

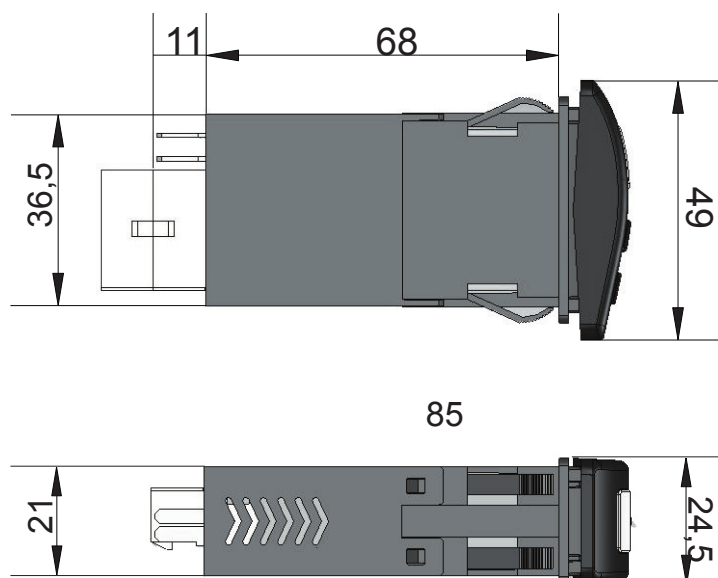


Control system for one wiper suited for low power motor. It's an all in one system, it doesn't need additional relay boxes, that makes it easy to mount (no screws are needed). It replaces up to two standard switches and it's suited for low power motors provided with parking switch. It works both with single speed and double speed motors. Three buttons in the switch allow to manage all the functions needed for windscreen cleaning: ON/OFF, timing and washing program. It is user friendly and it can be easily installed in few minutes, no screws are needed.

Functions

- 3 intermittent speed
- one or two continuous speed
- motor brake
- washing program

Power supply	12V -24V
Internal fuse	4 A PTC
Stand-by current	< 20 mA
Protection	Polarity inversion
Working temperature	-10 °C / +50 °C
Storage temperature	-20 °C / +70 °C
Motor – output current	Single or double speed – 4 Amps max
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program
Connections	10 poles connector
Inputs	1 parking switch (open in park position) Dimmer (connect to + supply if not used)
Outputs	1 slow speed – SLOW 1 high speed – FAST (if 2 speed motor) 1 wash pump (positive pole)
Case	ABS black



CT42

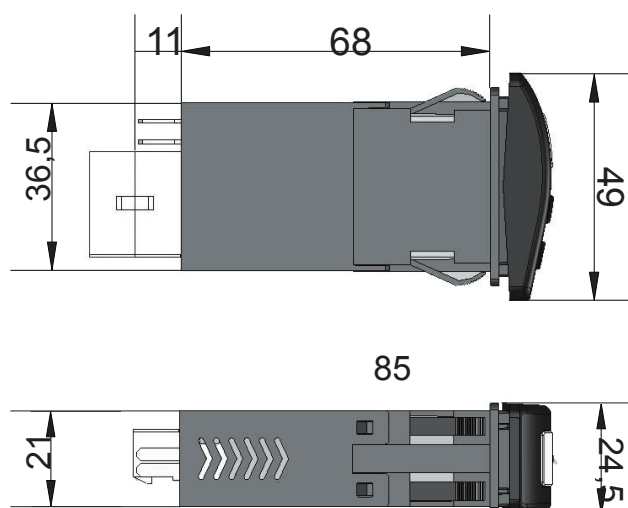


Control system for two wipers suited for low power motors. It's an all in one system, it doesn't need additional relay boxes, that makes it easy to mount (no screws are needed). It replaces up to three standard switches and it's suited for low power motors provided with parking switch. It works both with single speed and double speed motors. Three buttons in the switch allow to manage all the functions needed for windscreen cleaning: ON/OFF, timing and washing program. It is user friendly and it can be easily installed in few minutes, no screws are needed.

Functions

- 3 intermittent speed
- one or two continuous speed
- motor brake
- washing program

Power supply	12V -24V
Internal fuse	4 A PTC
Stand-by current	< 20 mA
Protection	Polarity inversion
Working temperature	-10 °C / +50 °C
Storage temperature	-20 °C / +70 °C
Motor – output current	Single or double speed – 4 Amps max
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program
Connections	10 poles connector 2x male 6,3 mm fast-on
Inputs	2 parking switch (open in park position) Dimmer (connect to + supply if not used)
Outputs	2 slow speed – L and R SLOW 2 high speed – L and R FAST (if 2 speed motors) 1 wash pump (positive pole)
Case	ABS black



CT41P



Control system for one wiper suited for high power motors. This system consists of the control switch and a relay box. It replaces up to two standard switches and it's suited for high power motors provided with parking switch. It works either with single speed motor and with double speed motor.

Three buttons in the switch allow to manage all the functions needed for windscreen cleaning: ON/OFF, timing and washing program.

It is user friendly and it can be easily installed in few minutes, no screws are needed.

Functions

- 3 intermittent speed
- one or two continuous speed
- motor brake
- washing program
- dimmer input

Easy to install

Plug-in connector

Fast-on contacts for motor connections.

Power supply	12V -24V	
Internal fuse	12 A PTC	
Stand-by current	< 20 mA	
Protection	Polarity inversion	
Working temperature	-10 °C / +50 °C	
Storage temperature	-20 °C / +70 °C	
Motor – output current	Single or double speed – 12 Amps max	
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program	
Connections	Relay box	Switch
	1x 7 poles Conn. 1x 8 poles connectors RJ45 (can bus network)	1x 4 poles Minifit Conn. 1x 8 poles connectors RJ45 (can bus network).
Inputs	1 parking switch (open in park position) Dimmer (connect to + supply if not used)	
Outputs	1 slow speed – SLOW 1 high speed – FAST (if 2 speed motors) 1 wash pump (positive pole)	
Case	ABS black	

CT42P



 x2



Control system for two wipers suited for high power motors. This system consists of the control switch and a relay box. It replaces up to three standard switches and it's suited for high power motors provided with parking switch. It works either with single speed motor and with double speed motor.

Three buttons in the switch allow to manage all the functions needed for windscreen cleaning: ON/OFF, timing and washing program.

It is user friendly and it can be easily installed in few minutes, no screws are needed.

Functions

- 3 intermittent speed
- one or two continuous speed
- motor brake
- washing program
- dimmer input

Easy to install

Plug-in connector

Fast-on contacts for motor connections.

Power supply	12V -24V	
Internal fuse	12 A PTC	
Stand-by current	< 20 mA	
Protection	Polarity inversion	
Working temperature	-10 °C / +50 °C	
Storage temperature	-20 °C / +70 °C	
Motor – output current	Single or double speed – 12 Amps max	
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program	
Connections	Relay box	Switch
	2x 4 poles connector 3x female 6,3 mm fast-on 1x 8 poles connectors RJ45 (can bus network)	1x 4 poles Minifit Conn. 1x 8 poles connectors RJ45 (can bus network).
Inputs	2 parking switch (open in park position) Dimmer (connect to + supply if not used)	
Outputs	2 slow speed – SLOW 2 high speed – FAST (if 2 speed motors) 1 wash pump (positive pole)	
Case	ABS black	

CT43P



Control system for three wipers suited for high power motors. This system consists of the control switch and a relay box. It replaces up to three standard switches and it's suited for high power motors provided with parking switch. It works either with single speed motor and with double speed motor. Three buttons in the switch allow to manage all the functions needed for windscreen cleaning: ON/OFF, timing and washing program.

It is user friendly and it can be easily installed in few minutes, no screws are needed.

Functions

- 3 intermittent speed
- one or two continuous speed
- motor brake
- washing program
- dimmer input

Easy to install

Plug-in connector

Fast-on contacts for motor connections.

Power supply	12V -24V	
Internal fuse	12 A PTC	
Stand-by current	< 20 mA	
Protection	Polarity inversion	
Working temperature	-10 °C / +50 °C	
Storage temperature	-20 °C / +70 °C	
Motor – output current	Single or double speed – 12 Amps max	
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program	
Connections	Relay box	Active Switch
	3x 4 poles connectors 2x male 9,5 mm fast-on 2 1x 8 poles connectors RJ45 (can bus network)	1 x 8 poles connectors RJ45 (can bus network) 1x 10 poles teleph. conn.
		Passive Switch
		1x 10 poles teleph. conn.
Inputs	3 parking switch (open in park position) Dimmer (connect to + supply if not used)	
Outputs	3 slow speed – SLOW 3 high speed – FAST (if 2 speed motors) 1 wash pump (positive pole)	
Case	ABS black	

CT44P



 x4



Control system for four wipers suited for high power motors. This system consists of three control switches and a relay box.

It replaces up to five standard switches and it's suited for high power motors provided with parking switch. It works either with single speed motor and with double speed motor. Three buttons in the switch allow to manage all the functions needed for windscreen cleaning: ON/OFF, timing and washing program.

It is user friendly and it can be easily installed in few minutes, no screws are needed.

Functions

- 3 intermittent speed
- one or two continuous speed
- motor brake
- washing program
- dimmer input

Easy to install

Plug-in connector

Fast-on contacts for motor connections.

Power supply	12V -24V	
Internal fuse	12 A PTC	
Stand-by current	< 20 mA	
Protection	Polarity inversion	
Working temperature	-10 °C / +50 °C	
Storage temperature	-20 °C / +70 °C	
Motor – output current	Single or double speed – 12 Amps max	
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program	
Connections	Relay box	Active Switch
	4x 4 poles connectors 4x male 9,5 mm fast-on 2 x 8 poles connectors RJ45 (can bus network)	1 x 8 poles connectors RJ45 (can bus network) 1x 10 poles teleph. conn.
		Passive Switch
		1x 10 poles teleph. conn.
Inputs	4 parking switch (open in park position) Dimmer (connect to + supply if not used)	
Outputs	4 slow speed – SLOW 4 high speed – FAST (if 2 speed motors) 1 wash pump (positive pole)	
Case	ABS black	

CT45P



 x5



Control system for five wipers suited for high power motors. This system consists of three control switches and a relay box.

It replaces up to three standard switches and it's suited for high power motors provided with parking switch. It works either with single speed motor and with double speed motor. Three buttons in the switch allow to manage all the functions needed for windscreen cleaning: ON/OFF, timing and washing program.

It is user friendly and it can be easily installed in few minutes, no screws are needed.

Functions

- 3 intermittent speed
- one or two continuous speed
- motor brake
- washing program
- dimmer input

Easy to install

Plug-in connector

Fast-on contacts for motor connections.

Power supply	12V -24V	
Internal fuse	12 A PTC	
Stand-by current	< 20 mA	
Protection	Polarity inversion	
Working temperature	-10 °C / +50 °C	
Storage temperature	-20 °C / +70 °C	
Motor – output current	Single or double speed – 12 Amps max	
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program	
Connections	Relay box	Active Switch
	4x 4 poles connectors 4x male 9,5 mm fast-on 2 x 8 poles connectors RJ45 (can bus network)	1 x 8 poles connectors RJ45 (can bus network) 1x 10 poles teleph. conn.
		Passive Switch
		1x 10 poles teleph. conn.
Inputs	5 parking switch (open in park position) Dimmer (connect to + supply if not used)	
Outputs	5 slow speed – SLOW 5 high speed – FAST (if 2 speed motors) 1 wash pump (positive pole)	
Case	ABS black	

CT2N2



CT2N2 is a microcontroller-based wiper control system for 2 wiper motors.

CT2N2 is composed by one control panel CP4P2 and one relay box SRM2P.

Control panel is connected to relay box by one serial cable (CANBUS cable) with two 8 pole plugs. Every unit has two plugs (in parallel) and any one or both can be used.

Each wiper can be switched on one by one.

Features

- three intermittent speeds (four in case of single speed motor)
- one or two continuous speeds
- synchronized brushes at any mode
- motor brake
- washing program
- an additive control panel CP4P2 can be added to work from different stations.

Power supply	12V -24V	
Internal fuse	12 A PTC	
Stand-by current	< 70 mA at 12V (< 40 mA at 24V)	
Protection	Polarity inversion	
Working temperature	-10 °C / +50 °C	
Storage temperature	-20 °C / +70 °C	
Motor – output current	Single or double speed – 12 Amps max	
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program	
Connections	Relay box SRM2P	Control panel CP4P2
	2x 4 poles connectors 2x male 9,5 mm fast-on 1x male 6,3 mm fast-on 2x 8 poles connectors RJ45 (can bus network)	2x 8 poles connectors RJ45 (can bus network)
Inputs	2 parking switch (open in park position) Dimmer (connect to + supply if not used)	
Outputs	2 slow speed – SLOW 2 high speed – FAST (if 2 speed motors) 1 wash pump (positive pole)	
Case	ABS black	

CT2N3



CT2N3 is a microcontroller-based wiper control system for 3 wiper motors.

CT2N3 is composed by one control panel CP4P3 and one relay box SRM3P.

Control panel is connected to relay box by one serial cable (CANBUS cable) with two 8 pole plugs. Every unit has two plugs (in parallel) and any one or both can be used.

Each wiper can be switched on one by one.

Features

- three intermittent speeds (four in case of single speed motor)
- one or two continuous speeds
- synchronized brushes at any mode
- motor brake
- washing program
- an additive control panel CP4P3 can be added to work from different stations

Power supply	12V -24V	
Internal fuse	12 A PTC	
Stand-by current	< 70 mA at 12V (< 40 mA at 24V)	
Protection	Polarity inversion	
Working temperature	-10 °C / +50 °C	
Storage temperature	-20 °C / +70 °C	
Motor – output current	Single or double speed – 12 Amps max	
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program	
Connections	Relay box SRM3P	Control panel CP4P3
	3x 4 poles connectors 2x male 9,5 mm fast-on 1x male 6,3 mm fast-on 2x 8 poles connectors RJ45 (can bus network)	2x 8 poles connectors RJ45 (can bus network)
Inputs	3 parking switch (open in park position) Dimmer (connect to + supply if not used)	
Outputs	3 slow speed – SLOW 3 high speed – FAST (if 2 speed motors) 1 wash pump (positive pole)	
Case	ABS black	

CT2N4



CT2N4 is a microcontroller-based wiper control system for 4 wiper motors.

CT2N4 is composed by one (or more) control panel CP4P4 and one relay box SRM4P.

Control panel is connected to relay box by one serial cable (CANBUS cable) with two 8 pole plugs. Every unit has two plugs (in parallel) and any one or both can be used.

Each wiper can be switched on one by one.

Features

- three intermittent speeds (four in case of single speed motor)
- one or two continuous speeds
- synchronized brushes at any mode
- motor brake
- washing program
- an additive control panel CP4P4 can be added to work from different stations

Power supply	12V -24V	
Internal fuse	12 A PTC	
Stand-by current	< 70 mA at 12V (< 40 mA at 24V)	
Protection	Polarity inversion	
Working temperature	-10 °C / +50 °C	
Storage temperature	-20 °C / +70 °C	
Motor – output current	Single or double speed – 12 Amps max	
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program	
Connections	Relay box SRM4P	Control panel CP4P4
	4x 4 poles connectors 4x male 9,5 mm fast-on 1x male 6,3 mm fast-on 2x 8 poles connectors RJ45 (can bus network)	2x 8 poles connectors RJ45 (can bus network)
Inputs	4 parking switch (open in park position) Dimmer (connect to + supply if not used)	
Outputs	4 slow speed – SLOW 4 high speed – FAST (if 2 speed motors) 1 wash pump (positive pole)	
Case	ABS black	

CT2N5



CT2N5 is a microcontroller-based wiper control system for 5 wiper motors.

CT2N5 is composed by one control panel CP4P5 and one relay box SRM5P.

Control panel is connected to relay box by one serial cable (CANBUS cable) with two 8 pole plugs. Every unit has two plugs (in parallel) and any one or both can be used.

Each wiper can be switched on one by one.

Features

- three intermittent speeds (four in case of single speed motor)
- one or two continuous speeds
- synchronized brushes at any mode
- motor brake
- washing program
- an additive control panel CP4P5 can be added to work from different stations

Power supply	12V -24V	
Internal fuse	12 A PTC	
Stand-by current	< 70 mA at 12V (< 40 mA at 24V)	
Protection	Polarity inversion	
Working temperature	-10 °C / +50 °C	
Storage temperature	-20 °C / +70 °C	
Motor – output current	Single or double speed – 12 Amps max	
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program	
Connections	Relay box SRM5P	Control panel CP4P5
	5x 4 poles connectors 4x male 9,5 mm fast-on 1x male 6,3 mm fast-on 2x 8 poles connectors RJ45 (can bus network)	2x 8 poles connectors RJ45 (can bus network)
Inputs	5 parking switch (open in park position) Dimmer (connect to + supply if not used)	
Outputs	5 slow speed – SLOW 5 high speed – FAST (if 2 speed motors) 1 wash pump (positive pole)	
Case	ABS black	

CT2N6



CT2N6 is a microcontroller-based wiper control system for 6 wiper motors.

CT2N6 is composed by one control panel CP4P63 and two relay boxes SRM3P.

Control panel is connected to relay boxes by two serial cable (CANBUS cable) with two 8 pole plugs. Every unit has two plugs (in parallel) and any one or both can be used.

Each button manages two wipers.

Features

- three intermittent speeds (four in case of single speed motor)
- one or two continuous speeds
- synchronized brushes at any mode
- motor brake
- washing program
- an additive control panel CP4P63 can be added to work from different stations

Power supply	12V -24V	
Internal fuse	12 A PTC	
Stand-by current	< 70 mA at 12V (< 40 mA at 24V)	
Protection	Polarity inversion	
Working temperature	-10 °C / +50 °C	
Storage temperature	-20 °C / +70 °C	
Motor – output current	Single or double speed – 12 Amps max	
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program	
Connections	2 x Relay box SRM3P	Control panel CP4P63
	3x 4 poles connectors 2x male 9,5 mm fast-on 1x male 6,3 mm fast-on 2x 8 poles connectors RJ45 (can bus network)	2x 8 poles connectors RJ45 (can bus network)
Inputs	5 parking switch (open in park position) Dimmer (connect to + supply if not used)	
Outputs	5 slow speed – SLOW 5 high speed – FAST (if 2 speed motors) 1 wash pump (positive pole)	
Case	ABS black	

CTMOD



CTMOD is a product series for whom want to manage more than 5 wipers and for customized systems.

The modular system is built combining two or more relay box (available for 2,3,4,5 wipers).

With CTMOD it's possible to customize the wiper control system making one or more groups of wipers each managed by one button or to get a dedicated spray for each wiper.

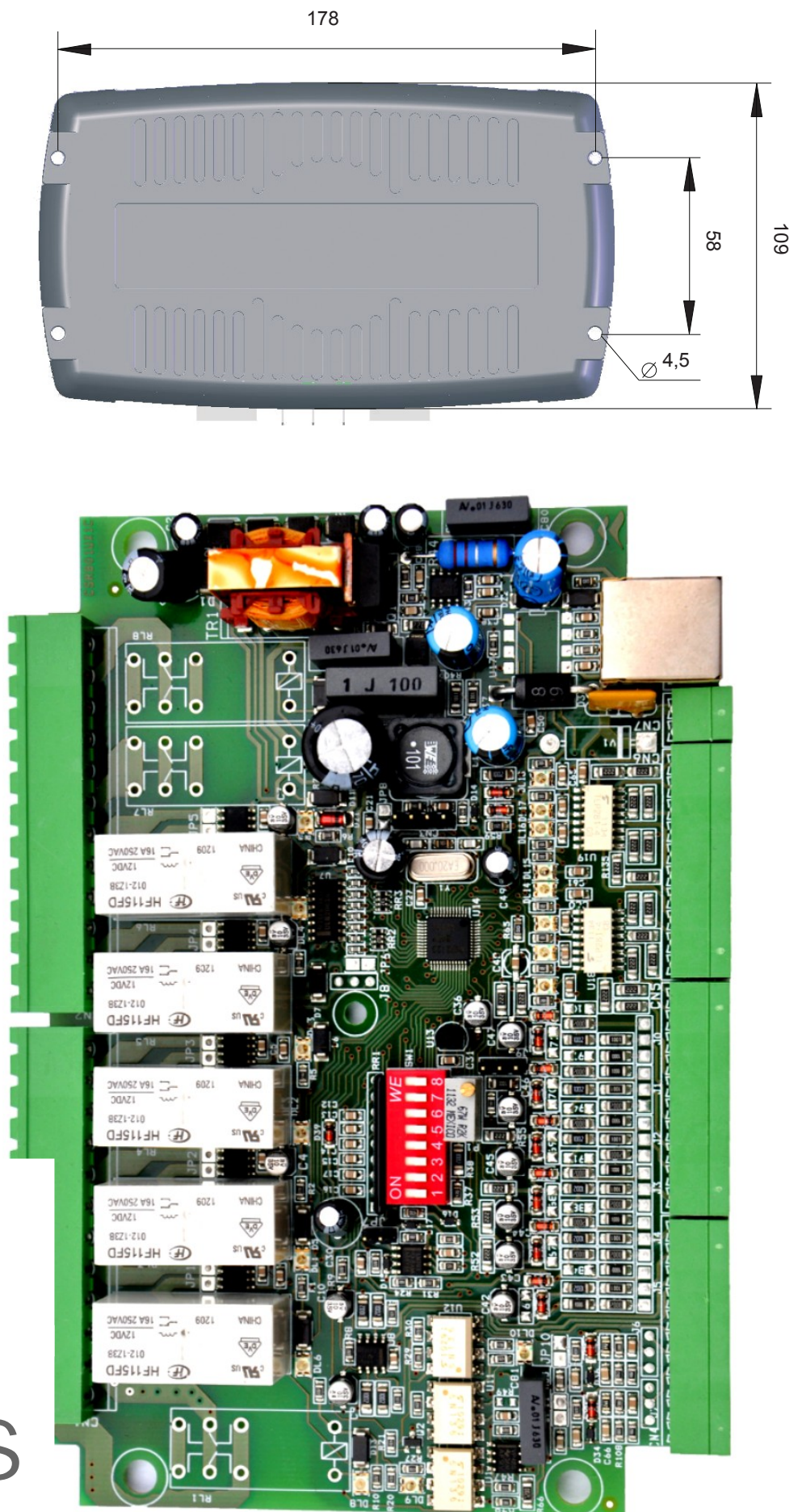
Front side is customizable choosing between a CP4P panel, one or more switches as CT40P or using any kind of common switches.

Air purge and heater are available on request.

Features

- three intermittent speeds (four in case of single speed motor)
- one or two continuous speeds
- synchronized brushes at any mode
- motor brake
- washing program

I / O Boards



RB01S1



Features

- 8 digital inputs with optical insulation
- 6 analogue inputs
- 2 inputs for frequency measurement
- 8 output relays with Common, NO and NC contacts (SPDT)
- 2 low power analogue outputs
- Galvanically isolated RS485 serial communication line
- Galvanically isolated CANBUS serial communication line
- Power supply: 12/24 VDC (from 10 to 35V) and from 8 to 24 VAC 50/60 Hz
- DIN rail version (DIN EN 50022) or grey ABS box

RB01S1 inputs and outputs are managed by the serial communication lines using the MODBUS RTU protocol over RS485 and by a proprietary open protocol (similar to MODBUS RTU) over CANBUS.

It is possible to use only one of the two serial lines or both. The serial lines are galvanically isolated by power supply and galvanically isolated one by the other.

RB01C1



An important feature that differentiates RB01C1 from other similar products is the measurements of the current in the common contact of the relays allowing control of the loads connected to the output.

Features

- 8 digital inputs with optical insulation
- 5 analogue inputs
- 2 inputs for frequency measurement
- 5 output relays with Common, NO and NC contacts (SPDT)
- Measurement of the current in the Common contact of the relays
- 2 low power analogue outputs
- Galvanically isolated RS485 serial communication line
- Galvanically isolated CANBUS serial communication line
- Power supply: 12/24 VDC (from 10 to 35V) and from 8 a 24 VAC 50/60 Hz
- DIN rail version (DIN EN 50022) or grey ABS box

RB01C1 inputs and outputs are managed by the serial communication lines using the MODBUS RTU protocol over RS485 and by a proprietary open protocol (similar to MODBUS RTU) over CANBUS.

It is possible to use only one of the two serial lines or both. The serial lines are galvanically isolated by power supply and galvanically isolated one by the other.

Accessories



1_Panel starting switches

Starting switch with starting lock
Starting switch without starting lock
Starting switch with starting lock
and pre-heating

2_Front panel accessories

Covered switches
Stop push-buttons
Fuses and fuse blocks

3_Acoustic signaling

Front panel 24 V buzzer
24 V siren

4_Adapter and relay miniboard

Magnetic pick-up adapter
SR12 relay board
Relay mini-board to drive
external siren

5_Cabling and extension

wire connectors
ILME 16 / 24 poles
AMP17 / AMP23 16 poles
DEUTSCH 21 poles

6_Thermal transducers

K type thermocouple
18MA, 12MA and ¼ GAS

7_Engine revolution reader transducers

Magnetic pick-up d. 16x1.5
Amplified proximity switch
0 – 105 °C

8_Industrial transducer

INT42VD012 kit – 0-10 bar
INT42VD025 kit – 0-2.5 bar

9_Extension wires

One to one connection
"Y" connection for Master-Slave
configuration

10_Engine Box

Supplied with any kind
of connector
Supplied with anti-vibrant

