catalogue

IMQ
CERTIFIED
QUALITY MANAGEMENT SYSTEM
ISO 9001:2015

IQNET
RECOGNIZED
CERTIFICATION

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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.

CM Series

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

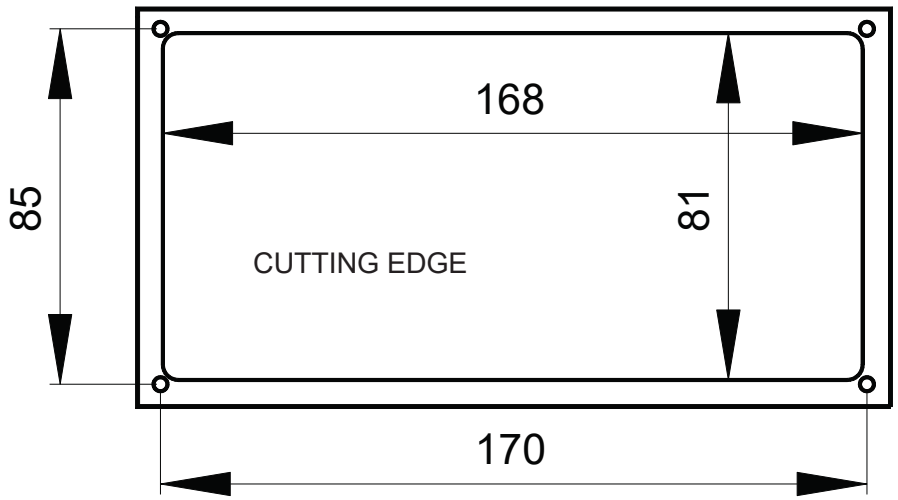
Five warning lamps for signallings and alarms:
- High water temperature
- Low oil pressure
- Alternator
- Preheating
- Low battery

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	



DEPTH: 100mm

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:

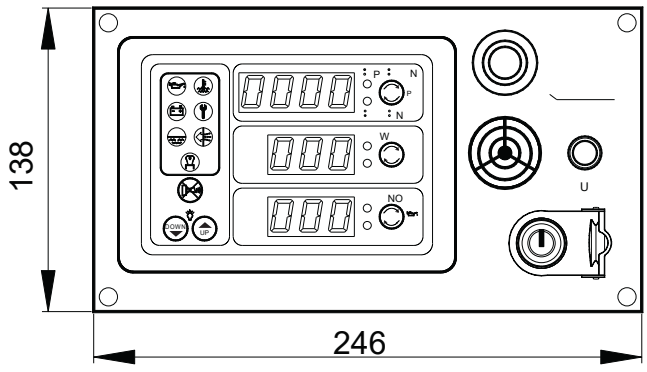
- RPM
- Working hours
- Battery voltage
- Water temperature
- Fuel level
- Engine Oil pressure

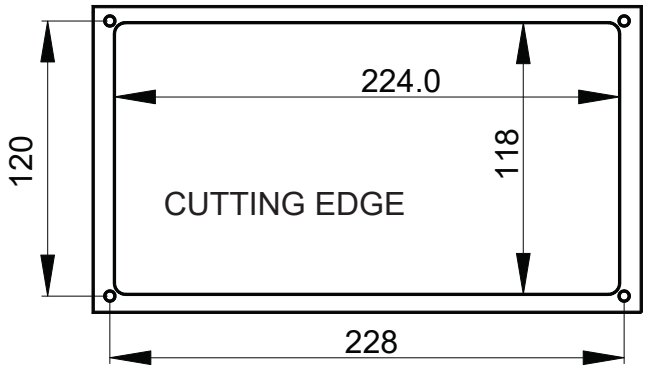
Seven warning lamps for signallings and alarms:
Low oil pressure
High water temperature
Alternator
Low battery
Alarm 1
Low fuel level
Preheating (only on request)
Variable brightness intensity

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	





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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:

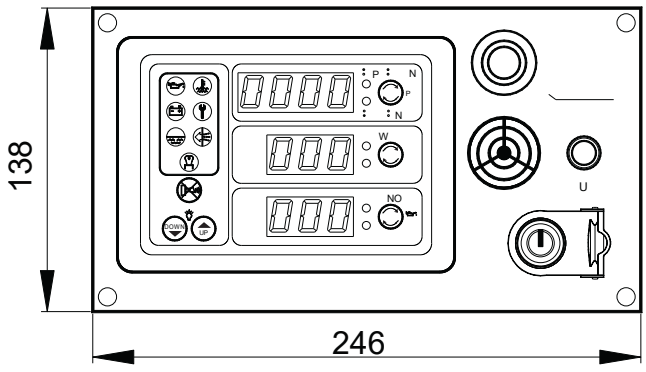
- RPM
- Working hours
- Maintenance / Oil change timer management
- Water temperature
- Engine Oil pressure
- Battery voltage

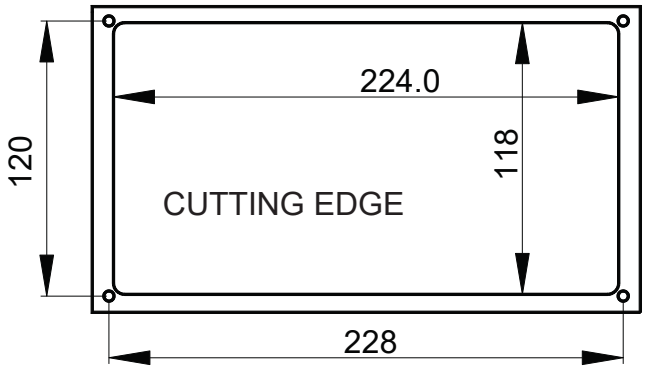
Seven warning lamps for signallings and alarms:
Low oil pressure
High water temperature
Alternator
Maintenance / Oil change
Alarm 1
Alarm 2 (only CM3A)
Preheating (only on request) / Alarm 3
Variable brightness intensity.

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	





DEPTH : 100mm

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

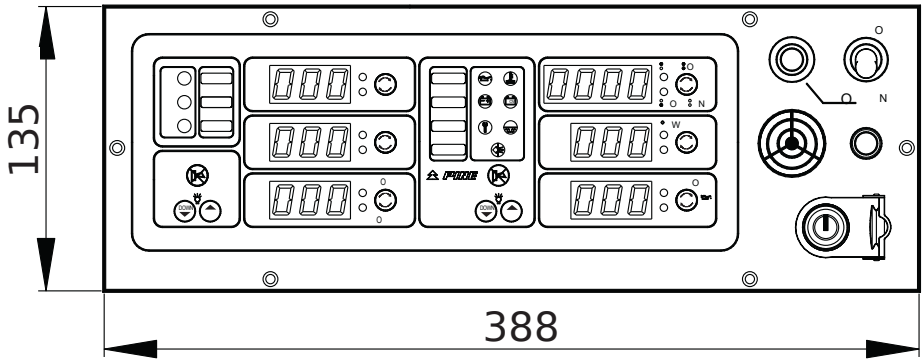
Visualization
Fourteen readings in a 7-segments led display (5x3-digits 1x4-digits):

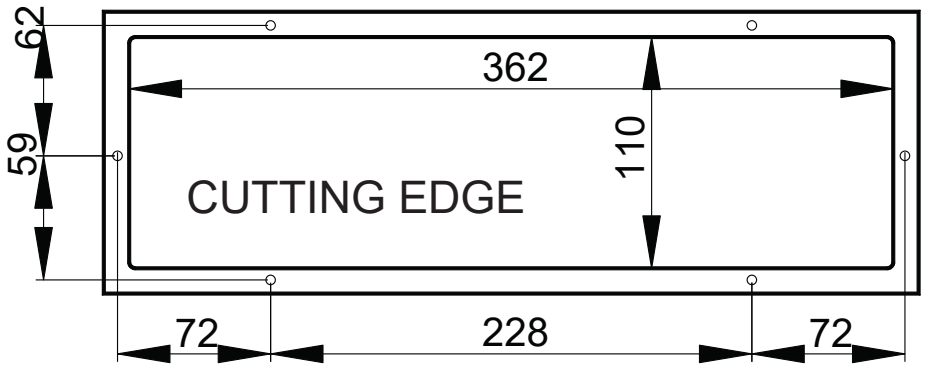
- RPM
- Working hours
- 8 analog readings
- Maintenance / Oil change timer management
- One or two exhaust gas temperatures
- Ten warning lamps for signallings and alarms
- Variable brightness intensity

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





DEPTH : 100mm

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.
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".

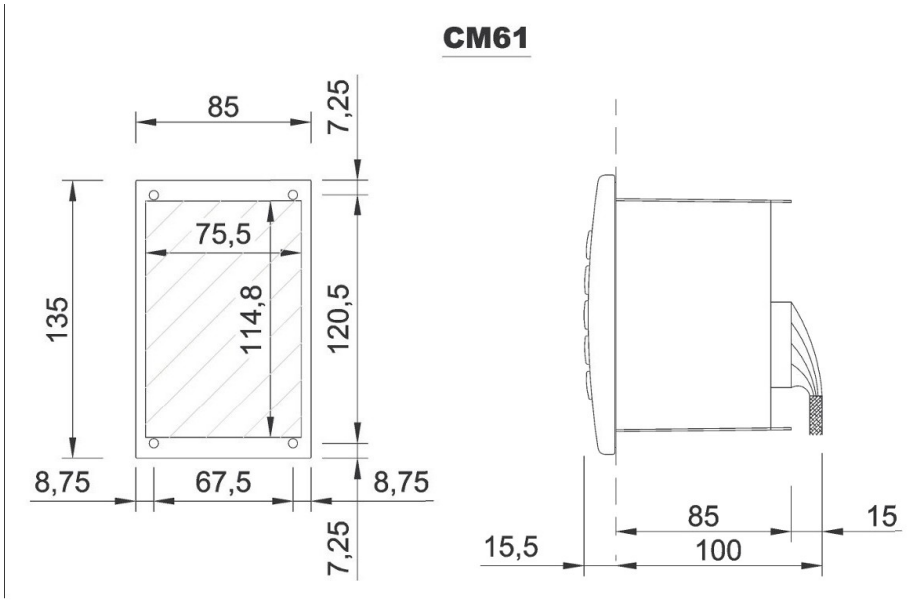
Standard Features

Visualization
High contrast monochromatic LCD sun light readable
6+6 analogue readings displayed
8+8 icons/warning-lights for alarms/safeties/faults signallings
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".

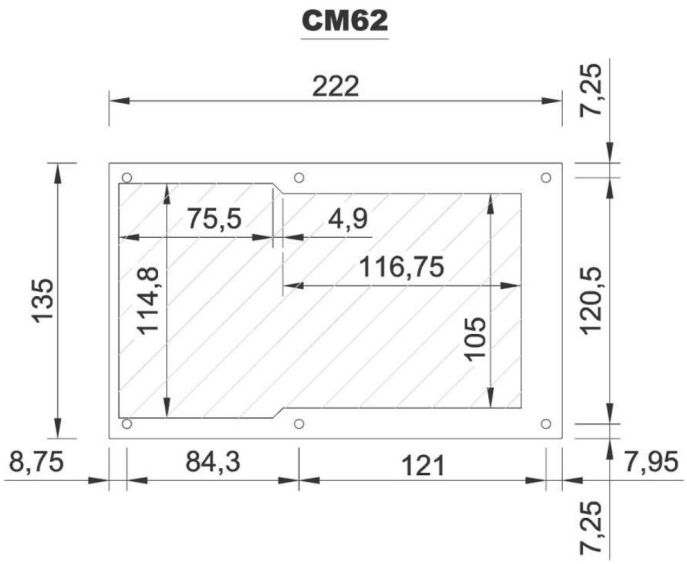
Standard Features

Visualization
High contrast monochromatic LCD sun light readable
6+6 analogue readings displayed
8+8 icons/warning-lights for alarms/safeties/faults signallings
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 signallings
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

PINE

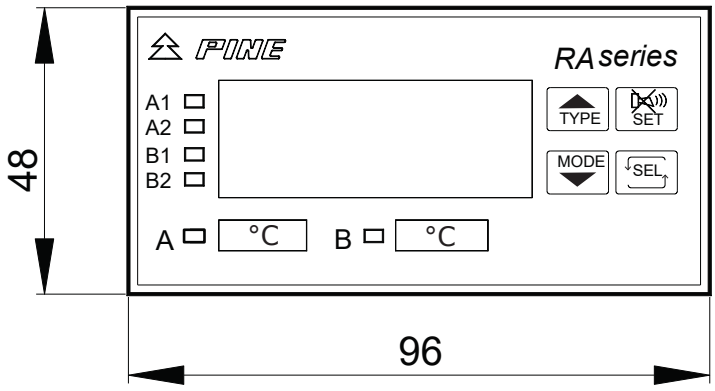
RA Series

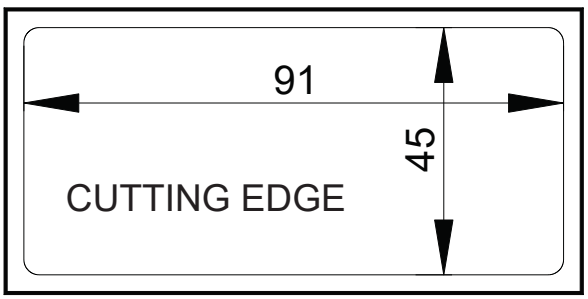
Digital Gauges

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.

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



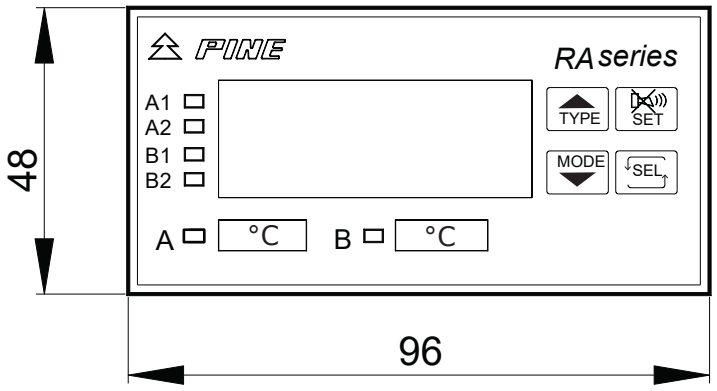


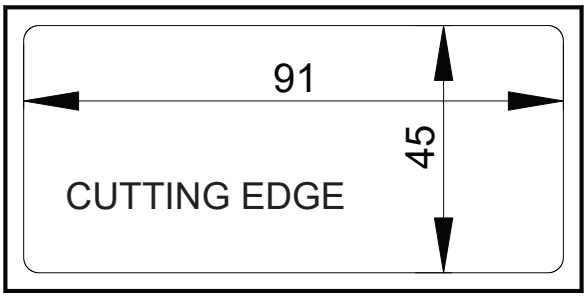
DEPTH : 120mm

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 fot maintenance or oil change management.
Instrument can be set to read very low RPM, also displayed with a decimal digit.

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



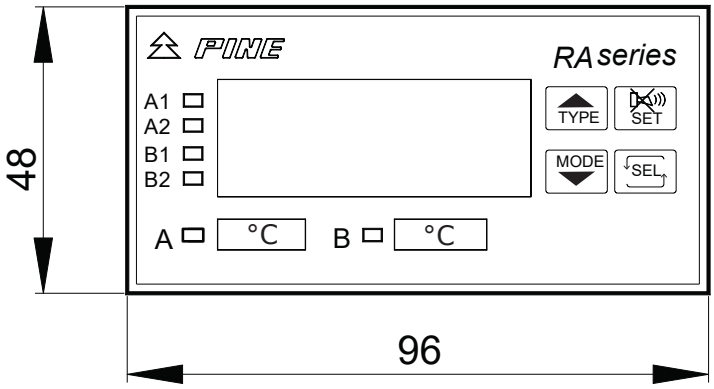


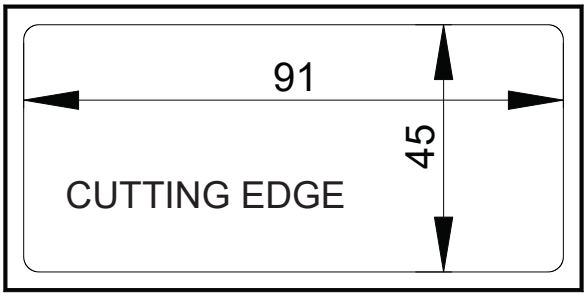
DEPTH : 120mm

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.

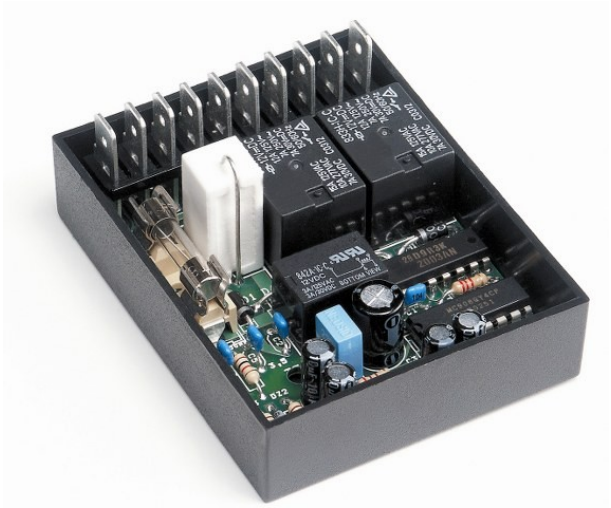
Power supply	12V / 24V
Power consumption	< 200mA 12V <100mA 24V
Working temperature	-5 °C / +60 °C
Available alarms	Two adjustable threshold for each alarm LED signalings Buzzer SPDT output pins (on request)
Relay output	SPDT type, I_{max} = 2A res. / V_{max} = 50 V
Scale proportional adjustement	+/-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





CT Series

Wiper control



CT61

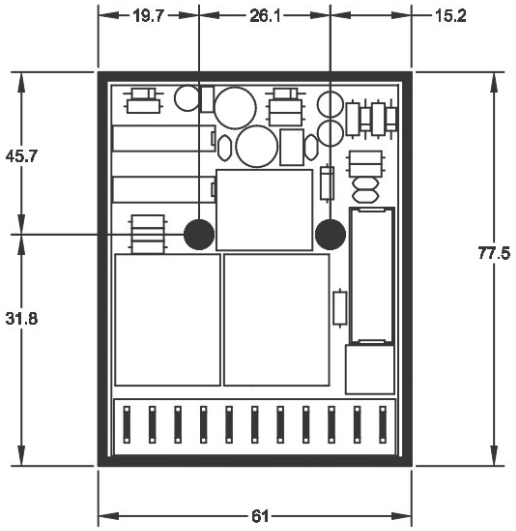
CT61 is a microcontroller-based control unit for one wiper. It manages both single speed and double speed motors. All functions are performed by a DPDT (double pole, double throw) momentary switch (not provided) with neutral position (On – Off – On).

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



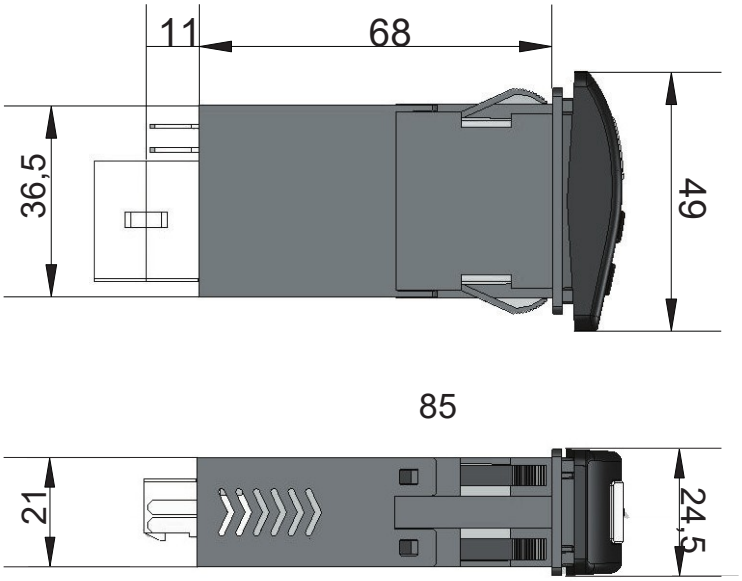
x1

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



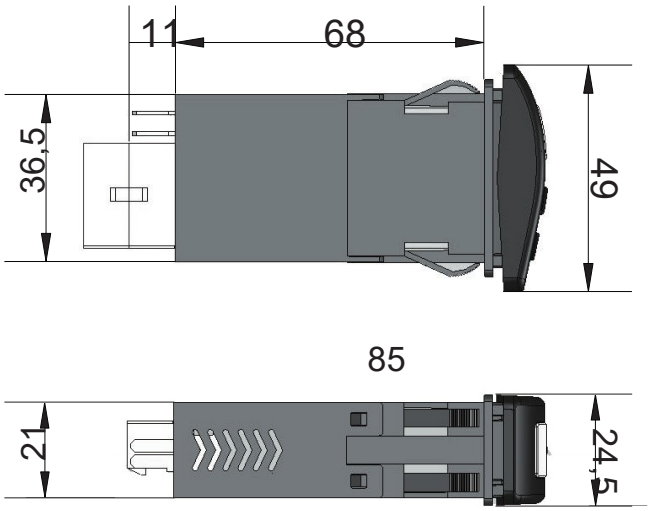
x2

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

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.

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

CT44P

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

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

RB Series

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 cennected 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 co nnectors
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

Phone: +39 0426 357041
Email: info@pinesrl.com
www.pinesrl.com