



since 1893

## CONTROL TECHNOLOGY

Condor manufactures control systems focusing on the areas of pressure and water technology.

We support you purposefully and professionally with realization of your project.

Individual solutions for the field electronic controls are a further components in our service programme.

## ELECTRONIC STAGING AND SEQUENCING CONTROL GLW 4

Condor GLW controls have been used to monitor up to 4 compressors in primary load set up. The GLW 4 evaluates the mains pressure and rotates the connected compressors on a time-dependent basis. If desired.

## CONDOR PUMP CONTROLS – NEW GENERATION

Condor offers standardized and custom control system solutions for drinking water, raw water and wastewater. With our pump controls, we can offer you standardized devices for the field of waste water management, for example in waste water pump systems, ducts and pumping stations.

### CPS-L pump control

is designed for the automatic control of 1 pump

- for price sensitive application

### CPS-B1 / CPS-B2

they are designed for the automatic control of 1 or 2 pumps

- Basic pump control, high quality & compact

### CPS-B1 SA / CPS-B2 SA

they are designed for the automatic control of 1 or 2 pumps

- Basic pump control with soft starter

### CPS-M Plus for up to 4 pumps

- modular pump control of the latest generation

## STAR / DELTA CONNECTION

The Star/Delta connection is used in order to reduce high currents when starting electric motors. With this 2-stage starter the inrush current (star circuit) is reduced by 1/3 of the height to be expected when starting the motor directly.

### CSDU

The Star/delta connection offers, in due consideration of the relevant standards, the possibility of economically operating motors with a switching capacity greater than 4 kW using public mains networks.

### CSDU-M

The Star/delta connection CSDU-M offers the possibility to operate a motor until 7,5 kW using public supply networks. The pressure switch MDR 3 included in the scope of supply replaces a contactor and can be delivered in different options.

## RIDING ARENA CONTROL SYSTEM CRS

### CRS

The Condor riding arena control system is used to automatically water and drain riding arenas and halls.

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## Staging and Sequencing Control for Compressors



More and more companies today need an economic operating air pressure system.

an internal timer is available e.g. shift work applications.

Thereby, several compressors are often connected to each other. Since 1995 Condor GLW controls have been used to monitor up to 4 compressors in primary load set up.

The GLW 4 evaluates the mains pressure and rotates the connected compressors on a time-dependent basis. If desired,

Following functions can be activated:

- Internal pressure transducer 0 to 16 bar
- Connection of an external pressure transducer, two-wire 4 to 20mA
- Programmable internal time switch (controls up to 6 profiles)
- Programmable primary load and load changeover functions, allowing for the primary load compressor to operate without taking part in the rotation process. Only the load changeover compressors are rotated.
- Programmable ball valve control with max. 3 compressors
- Direct switchover after the load changeover time has elapsed.
- Four digital inputs (e.g. for hourmeter )
- Input: bridge time switch
- Input: remote release
- Parameter password protection
- Units reversible bar/psi

## Type overview GLW 4

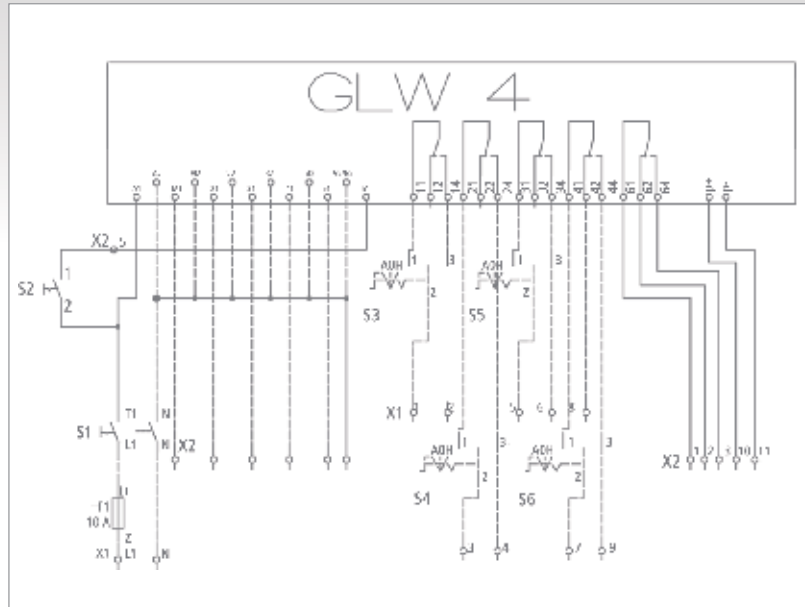
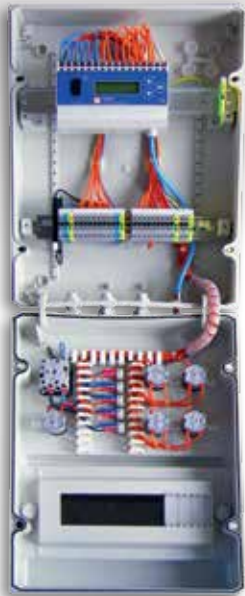


Order reference	Description	Weight (in g)	Part No.
GLW 4	GLW 4 without wiring, enclosure	520	237761
GLW 4-S	GLW 4 in pre-wired plastic enclosure, (dimensions: 420x300 x170mm), DIN-Rail mounting, internal terminal blocks and wiring diagram.	2350	255475
GLW 4-S kompl.	GLW 4 in pre-wired plastic enclosure, (dimensions: 420x300 x170mm), DIN-Rail mounting, internal terminal blocks and wiring diagram. Additionally wired for 4 compressors: isolator, rotary switch „bridge timer“, rotary switch compressor 1 - 4, indicator lamps for voltage supply and compressors 1 – 4.	3550	255482

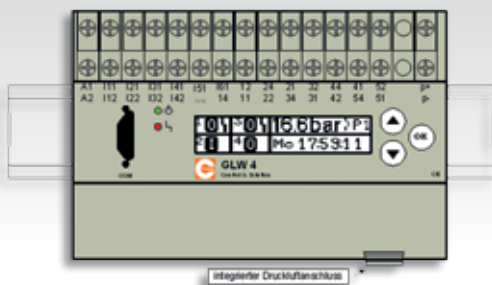
Additional styles on demand!

# Electronic staging and sequencing control GLW 4

## Wiring diagram GLW 4-S (completely assembled)

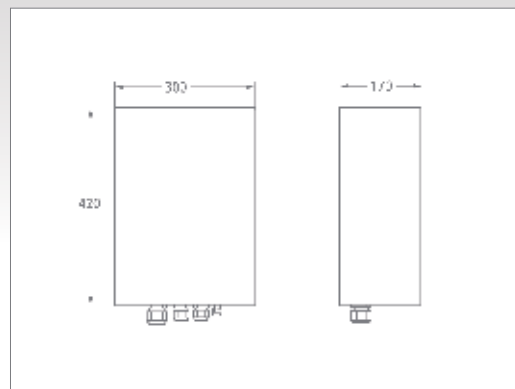
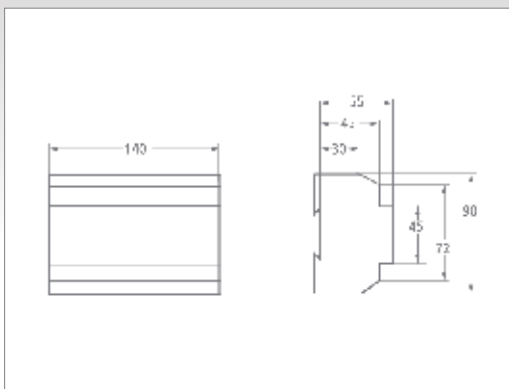


## Housing GLW 4 Terminal connections



- A1 / A2 = Mains voltage supply 90 – 265 V AC; 50/60 Hz
- I 11 bis I 42 = 4 digital inputs, 250V AC1, e. g. operating hours
- I 51 = External release input, 250V AC1
- I 61 = Bridge time switch input, 250V AC 1
- 11 bis 44 = Isolated SPDT outputs for max. 4 compressors 230V AC, max. 5A AC1
- 51, 52, 54 = Isolated alarm relay 230V AC, max. 5A AC1
- p+ / p- = External analogue connection 4..20mA Two wire  
 $U_b = 18-21V$  DC
- COM = V 24-Interface for PC programming

## Dimensions GLW 4 / GLW 4-S



Technical operating data	
Permissible operating voltage range $U_B$	90 – 265 V AC 50 – 60 Hz
Operating voltage influence at $\pm 10\%$ operating voltage fluctuation	< 0,1 %
Duty factor ED	100 %
Permissible ambient and media temperature	0°C up to +40°C
Permissible ambient humidity rel. humidity, non-condensing	10 % up to 90 %
Permissible storage temperature	-40°C up to +80°C
Clearance and creepage distances	VDE 0110
Working position	Any position
Power consumption Control	10 VA

Power section	
Series voltage acc. to VDE 0660 and VDE 0110 Group C	250 V-AC
Maximum continuous current per contact	6 A-AC
Maximum switching capacity per contact	1.500 VA (AC) 50 W (DC)
Mechanical life Cycles	approx. $1 \times 10^7$
Electrical life (max load) Cycles	approx. $2 \times 10^5$

Measuring accuracy and Requirements	
Input external pressure transducer	$\pm 2\%$ of end value
Internal pressure transducer	$\pm 2\%$ of end value
EM-Directive	89 / 336 / EWG
Low Voltage Directive	73 / 23 / EW

Digital in- and outputs	
4 Relay outputs isolated SPDT's	230V-AC; 5 A (AC1)
1 Alarm relay isolated SPDT	230V-AC; 5 A (AC1)
Internal buzzer	typical 70dBA
4 digital inputs 250V	AC 1 (I11/I12 I41/I42)
Input 250V-AC1 (I51/52)	External release signal
Bridge time switch	250V-AC1 (I61/62)

Analogue Interface	
Input analogue pressure transducer $U_B$ 4...20mA wire	18 – 21V-DC
Integrated pressure transducer With quick connect	0...16 bar

Enclosure	
Material	ABS flameproof, UL-approved
Mounting	snap on 35 mm DIN-rail connector acc. to EN 50 035
Enclosure-protection	IP 40
Protection against shock	acc. VBG 4
Terminals	Cage clamps
Cross section	2,5 mm <sup>2</sup>
Weight	520 g

Pressure connection	
Pneumatic tube diameter suitable pneumatic tube e.g.	6 x 1 mm Festo PAN





Pump control CPS B1



CPS-L

**NEW!**



CPS-B new generation

**NEW!**



CPS-B with soft starter new generation



CPS-M PLUS

## Level control technology

## Industries



### CPS-L

The CPS-L pump control is designed for the automatic control of one pump (max. 4 KW / 9A)

P. 118

Level control technology, this pump control can be ideally used for pumping systems in the field of domestic waste and sewage water as well as rain water.

### CPS-B new generation

Compact pump controls CPS-B1 and -B2 of the latest generation for more system transparency. They are designed for the automatic control of one or two pumps (max. 4 kW/9A)

**NEW!**

P. 120

Level control technology, this pump control can be ideally used for pumping systems in the field of domestic waste and sewage water as well as rain water.

### CPS-B SA new generation

Compact pump control CPS-B1 and -B2 with soft starter of the latest generation, are designed for the automatic control of one or two pumps (max. 11 kW/25A)

**NEW!**

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Level control technology, this pump control can be ideally used for pumping systems in the field of domestic waste and sewage water as well as rain water.

### CPS-M PLUS

Modular pump control CPS-M PLUS of the latest generation for more system transparency and function. They are designed for the automatic control for the operation of up to four pumps (max. 75 kW)

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Level control technology, for use in municipal, industrial, commercial and domestic applications.





**Condor products  
application areas:**

- Waste water management
- Air pressure technology
- Compressor control and monitoring
- Level measurement
- Pump control
- Rain water utilization
- Pumping stations
- Control system for riding surfaces
- Small sewage treatment plants

## Pump control CPS-L

## ... for price sensitive applications



Pump control CPS-L

For many price sensitive applications with limited available space, cost-effective but powerful pump controls are needed.

pumping systems in the field of domestic waste and sewage water as well as rain water.

**Condor's pump control CPS-L** handily fulfills these requirements. The CPS-L pump control is designed for the automatic control of one pump (max. 4 KW / 9A).

With its compact design, but with no essential concessions in terms of functions, this pump control can be ideally used for

## Advantages

- Compact housing (w200xh220xd140mm, incl. accessories). The CPS-L can be nearly used too broad
- Extensive basic equipment includes membrane keypad for operation / programming, LED displays for pump condition, illuminated display and extensive functionality / adjustability (see detailed description).
- Suitable for the control of pumps and sensors in explosive areas (ATEX) in accordance with DIN EN 60079-14, DIN VDE 0660 and EN 60947 (relay for manual motor starters is optional).
- Option available for serial PC-interface and software "WaterTel" .





## Technical details

### Adjustable control parameter

- Alarm level
- ATEX-mode
- Date / time
- Phase sequence monitoring
- Turn on delay
- On / off switch levels
- Failure display
- Short start against pump sticking
- Max. operating time
- Follow-up time
- Switching function of the potential-free alarm relay
- Language (G, E, F, I...)
- Maintenance display
- Cyclical emptying

### Options

- 2 x 9 V battery (power failure alarm)
- 230V (2,3 kW/9A) operating voltage is available
- MCB optional
- Overload relay (BI-metal) can be added
- Cylinder lock for the cover
- Pressure sensor (measuring range 0-2 meters w.c.) can be added

### Operation and Display

- Display 2x16 illuminated symbols
- Menu with membrane keypad
- Manual-OFF-Automatic – mode selection
- LED display for pump status
- LED display for pump readiness
- Both buzzer and LED alarm indication
- Open cover interlock
- Detailed menu with all relevant setting options
- Maintenance display
- ATEX-mode
- Phase sequence monitoring
- Display of operating hours and switching cycles

### Available connections

- Thermal contact (zero voltage safe)
- 1 X 230V / 1A output for possibly small compressor
- Potential-free alarm relay
- NC aux-contact

### Level monitoring

- 1 or 2 float switches
- Impact pressure method (optional: plug-on modul)
- 4-20 mA analog input e.g. for level sensor
- Separate high water float switch

Technical data CPS-L

Housing	ABS
Dimensions	w 200 x h 220 x d 140 mm, incl. accessories
Cable glands	2 x M25 x 1,5 3 x M16 x 1,5 1 x M12 x 1,5
Protection class	IP54
Max. protection on site	16A
Max. power of the pump	4KW
Number of pumps	1 pump
Control voltage	230V AC

Technical data CPS-L

Operating voltage / supply line	3x 400V 50 Hz (L1, L2, L3, N, PE)
Temperature range	0...+50°C
Potential-free alarm contact	5A (2A inductive)
Rated current	1,0 bis 1,6A 1,6 bis 2,5 A 2,5 bis 4,0 A 4,0 bis 6,0 A 5,5 bis 8,0 A 7,0 bis 9,0 A

## Pump control CPS-B

... high quality & compact pump control



**NEW!**



pump control CPS-B1 and CPS B2 - new generation

Compact pump controls CPS-B1 and -B2 of the latest generation for more system transparency. They are designed for the automatic control of one or two pumps (max. 4 kW/9A)

This pump control can be ideally used for pumping systems **in the field of domestic waste and sewage water as well as rain water.** For use in municipal, industrial, commercial and domestic applications.

With **high quality basic equipment in standard version** (main circuit breaker, manual motor starter, new QVGA color touch screen...).

### Advantages

- compact housing (w265xh270xd145mm) - especially suitable for the installation in exterior columns
- high quality basic equipment in standard execution (main circuit breaker, manual motor starter, Manual-0-Automatic function, new QVGA color touch screen, USB interface, connection systems different level monitoring...)
- free-selectable level monitoring
- all control functions are performed via the QVGA touch screen
- suitable for the operation of pumps and sensors in explosive areas (ATEX) \*\*
- for the use of 230V or 400V AC pumps
- telecontrol system with Ethernet-Modul or GSM-Modem (optional)
- pressure sensor (measuring range 0-2 meters w.c.) can be added

**NEW!**



## Technical details

### Adjustable control parameter

- alarm relay, programmable function
- ATEX-Mode
- date / time
- phase sequence monitoring and phase drop monitoring
- turn-on delay
- on / off switch levels
- integrated buzzer (can be switched on and off)
- integrated time switch for compressor function
- short pump start against locking
- load changeover time for pumps (CPS-B2)
- max. pump operating time
- minimum pressure monitoring
- password protection
- pump follow-up time
- compressor or agitator activation
- installed languages: DE, EN, FR, NL, IT (other languages on request)
- power monitoring (electrical)
- power monitoring (thermal-magnetic)
- delay time / high water alarm
- delay time between pump 1 and pump 2 (CPS-B2)
- maintenance display
- periodic emptying

### Options

- battery 6AA NiMH 1,2V (power failure alarm)
- execution - voltage 230V (2,2kW/9A)
- installation in exterior columns
  - + panel heater, + flashing light, + small compressor
- Ethernet module or GSM Modem retrofittable in the control unit
- pressure sensor (measuring range 0-2 meters w.c.)
- sep. housing for PTC relais, RCD, etc.
- cylinder lock for the cover
- zener barrier (1 or 2 pieces integrable)

### Operation and Display

- ATEX-mode
- menu navigation via backlit QVGA color touch screen:
- graphical display and plain text display
- graphical display - for level states
- graphical display - for operating states (pumps)
- graphical display - operational fault
- phase sequence monitoring and phase drop monitoring
- error list (20 fields saved retentively)
- Manual-OFF-Automatic - mode selection
- main circuit breaker
- internal buzzer
- transparent cover (locks in the open status)
- motor current indication
- manual motor starter (operable from outside)
- date / time adjustable
- maintenance display

### Available connections

- 1 pump (CPS-B1) or 2 pumps (CPS-B2)
- thermal contact (zero voltage safe)
  - ATEX, standard, ON / OFF function can be selected
- 2 x 230V / 2A output for possible small compressor
- 3 x potential-free alarm relays (3x change-over contact)
- float switch terminal for emergency operation function
- USB interface for software update
- connecting terminal
- terminal blocks for network supply
- plug-in terminals for level measurement
- pump connection - on the contactor

### Level monitoring

- 1, 2 (CPS-B1) or 3 float switches (CPS-B2)
- impact pressure sensor (measuring 0-2mWs) can be retrofitted
- 4-20 mA analog input e.g. for level sensor
- separate high water float switch

Technical Details CPS-B

Housing	ABS-plastic housing
Dimensions	w 265 x h 270 x d 145 mm, incl. accessories
Cable glands	3x M25 x 1,5 5x M16 x 1,5 1x M12 x 1,5
Protection class	IP54
Max. protection on site	25A
Max. power of the pump	4kW
Number of pumps	1 pump (-B1); 2 pumps (-B2)
Control voltage	230V AC / 24 V DC

Technical Details CPS-B

operating voltage	400V / 230 AC 50/60 Hz
temperature range	0...+50°C
potential-free alarm relay	5A (2A inductive)
storage temperature	-20 .... + 70°C

\* Photo shows optional accessories. Please refer to the back!

\*\* The rules of the DIN EN 60079 to be observed! The pump control is only provided for the „safe area“.

\*\*\*Technical changes and mistakes reserve.

Pump control CPS-B with soft starter

... gentle on material!



**NEW!**



pump control CPS-B2 - soft starter - new generation

Compact pump control CPS-B1 and -B2 with soft starter of the latest generation, are designed for the **automatic control of one or two pumps (max. 11 kW/25A)**

**With high quality basic equipment in standard execution** (main circuit breaker, manual motor starter, Manual-0-Auto, new QVGA color touch screen for operating conditions of the pumps, soft start, ...) optionally equipped with additional accessories.

This pump control can be among other things for the operation of pumps and sensors in explosive areas (ATEX). \*\*

## Advantages

- **compact housing** (w400xh390xd170mm)
- **high quality basic equipment** in standard execution (main circuit breaker, manual motor starter, soft start, Manual-0-Auto, **QVGA color touch screen for operating conditions** of the pumps, external serial PC-interface, display illuminated, extensive functionality and adjustability - see detailed description)
- **Soft starter (three phase systems)** - the soft starter controls the voltage steps from a selectable initial value to one hundred percent - this allows a stepless acceleration of under load motors from standstill
- **Soft start** - this cuts maintenance costs and extends the pump's lifetime
- suitable for the operation of **pumps (EEx d) in explosive areas (ATEX)** \*\*
- **free installation areas** e.g. for two zener barriers (operation of measuring and control technology as safe electrical circuits)\*\*

**NEW!**





## Technical details

### Adjustable control parameter

- alarm relay, programmable function
- ATEX-Mode
- date / time
- phase sequence monitoring and phase drop monitoring via soft start
- turn-on-delay
- on / off switch levels of the pumps
- reading errors
- integrated buzzer (can be turned on/off)
- integrated time switch for compressor function
- short pump start against locking
- load changeover time for pumps
- max. pump operating time
- follow-up time
- password protection
- pump power monitoring (electronic)
- soft start - adjustable parameters (start / stop ramp, kick start, starting voltage, current monitoring, Line or Delta)
- compressor or agitator activation
- installed languages: DE, EN, FR, NL, IT (other languages on request)
- power monitoring (themal-magnetic)
- delay time between pump 1 and pump 2 (CPS-B2)
- maintenance display
- periodic emptying

### Options

- battery 12 V / 1,2 Ah + cable set (buffering power failure alarm)
- installation in exterior columns  
+ panel heater, + flashing light, + small compressor
- pressure sensor (measuring range 0-2 meters w.c.)
- cylinder lock for the cover
- zener barrier (1 or 2 pieces integrable)
- additional cable glands

### Operation and Display

- ATEX-mode
- display of operationg hours and switching cycles
- error list (20 fields saved retentively)
- manual-OFF-Automatic - mode selection
- main circuit breaker
- transparent cover locks in the open status
- menu navigation via backlit QVGA color touch screen:
- graphical display and plain text display
- graphical display - for level states
- graphical display - for operating states (pumps)
- graphical display - operational fault
- motor current indication - LCD display
- from outside operable manual motor starter
- date / time adjustable
- maintenance display

### Available connections

- 1 pump (CPS-B1) or 2 pumps (CPS-B2)
- thermal contact (zero voltage safe)
- connection for external maintenance switch
- 2x 230V / 2A output for possibly small compressor
- 3x potential-free alarm relays (3x change-over contact)
- float switch terminal for emergency operation function
- RS232- connection for software update
- terminal blocks for network supply
- plug-in terminals for level measurement
- terminal blocks for pump connection (Line / Delta)

### Level monitoring

- 1, 2 (CPS-B1) or 3 float switches (CPS-B2)
- dynamic pressure measuring system (modular optional attachable)
- 4-20 mA analog input e.g. for level sensor
- separate high water float switch

Technical Details CPS-B SA

Housing	ABS-plastic housing
Dimensions	w 400 x h 390 x d 170 mm, incl. accessories
Cable glands	3x M32 x 1,5 2x M25 x 1,5 6x M16 x 1,5 1x M12 x 1,5
Protection class	IP54
Max. protection on site	50A
Max. power of the pump	7,5 kW / 11 kW
Number of pumps	1 pump (-B1); 2 pumps (-B2)
Control voltage	230V AC / 24 V DC

Technical Details CPS-B SA

operiong voltage / supply line	400V / 230 AC 50/60 Hz (3L, N, PE)
temperature range	0...+50°C
potential free alarm contact	5A (2A inductive)
power: rated current:	4 - 7,5 kW 5,3 - 16 A
power: rated current:	7,5 - 11 kW 8,3 - 25 A

\* Photo shows optional accessories. Please refer to the back!

\*\* The rules of the DIN EN 60079 to be observed! The pump control is only in provided for the „safe area“.

\*\*\*Technical changes and mistakes reserve.

## Pump control CPS-M PLUS

... for up to 4 pumps!



Pump control CPS-M PLUS

Modular pump control CPS-M PLUS of the latest generation for more system transparency and function. They are designed for the automatic control for the operation of up to four pumps (max. 75 kW).

This pump control can be ideally used for pumping systems in the field of domestic waste and sewage water as well as rain water. For use in municipal, industrial, commercial and domestic applicatons.

By connecting the **optional Ethernet module** and the web server authorized users can log in anytime, anywhere via the Internet in the control CPS-M PLUS. **The pumps and systems can be monitored and operated remotely.**

### Advantages

- **variable enclosure concepts**
- **high quality basic equipment in standard execution** (QVGA color touch screen, „manual-OFF-Automatic“, manual motor starter, float switch operation, level sensor or impact pressure method,.. see detailed description)
- customized solutions - **if desired, completely assembled and wired in an outer enclosure**
- suitable for the **operation of pumps and sensors in explosive areas (ATEX) \*\***
- **Telecontrol system** - Ethernet modul or GSM-modem for data transmission in the control unit can be retrofitted
- Simple operation via software and / or web server. USB interface for software updates or data readout via USB stick
- **different pump start-up phases** - direct starting, star/delta starting, soft starting, frequency drive



## Technical details

### Adjustable control parameter

- alarm relay, programmable function
- ATEX-Mode
- date / time
- phase sequence monitoring and phase drop monitoring
- turn-on delay
- on / off switch levels for each pump (alarm level)
- integrated buzzer (can be switched on and off)
- integrated time switch for compressor function
- short pump start against locking
- load changeover time for pumps
- max. pump operating time
- minimum and maximum current monitoring
- password protection
- compressor or agitator activation
- installed languages: DE, EN, FR, NL, IT, PL (other languages on request)
- power monitoring (electronical)
- power monitoring (thermal-magnetic)
- delay time / high water alarm
- delay time between pump „1“ and pump „2“
- maintenance display
- periodic emptying

### Options

- alarm system 6 A5 NiMH 1,2V (power failure alarm)
- operating voltage 230V pumps
- installation in exterior columns
  - + panel heater, + flashing light, + small compressor
- MCB
- „manuell-OFF-Automatic“ (rotary or toggle switch)
- LED display for operating states (pumps)
- PTC Relais, RCD, Line protection, overvoltage protection,... integrable
- pressure sensor (measuring range 0-2 meters w.c.)
- cylinder lock for the cover
- zener barrier (for safe circuits)\*\*

### Operation and Display

- ATEX-Mode
- backlit QVGA color touch screen
- display of operating hours and switching cycles
- phase sequence monitoring and phase drop monitoring
- error list (20 fields saved retentively)
- menu navigation via backlit QVGA color touch screen:
  - graphical display and plain text display
  - graphical display - for level states
  - graphical display - for operating states (pumps)
  - graphical display - operational fault
- „manual-OFF-Automatic“ - mode selection
- plain text display
- motor current indication
- manual motor starter
- key lock
- date / time adjustable
- detailed menu with all relevant setting options
- maintenance display

### Available connections

- 1 - 4 pumps
- per pump 1 thermal contact (zero voltage safe) and 1 thermal contact (automatically resetting)
- 2 x 230V / 1A output for possible small compressor
- 3 x potential-free alarm relays (3x change-over contact)
- connecting terminal (24 VDC)
- terminal blocks for network measurement
- screw terminals for level measurement
- terminal blocks for pump connection
- screw terminals for 4-20 mA analog output

### Level monitoring

- 1 or 4 float switches
- impact pressure sensor (measuring 0-2 mWs) - refitted at any time
- 4-20 mA analog input e.g. for level sensor
- separate high water float switch

Technical Details CPS-M PLUS

housing	metall- / ABS-plastic housing
dimensions	depending on the equipment
cable glands	depending on the equipment
protection class	min. IP54
max. protection on site	depending on the equipment
max. power of the pump	depending on the equipment
number of pumps	1 - 4 pumps
control voltage	230V AC / 24 V DC

Technical Details CPS-M PLUS

operating voltage	400V / 230 AC 50/60 Hz (special voltages possible)
temperature range	0...+50°C
potential-free alarm relay	5A (2A induktiv)
analog output	4 .... 20 mA

\* Photo shows optional accessories. Please refer to the back!

\*\* The rules of the DIN EN 60079 to be observed! The pump control is only provided for the „safe area“.

\*\*\*Technical changes and mistakes reserve.



# Equipment features CPS-L/ CPS-B / CPS-B SA & CPS-M PLUS

Connection Systems	CPS-L	CPS-B <sup>NEW!</sup>	CPS-B SA <sup>NEW!</sup>	CPS-M PLUS
Number of Pumps	1	1 / 2	1 / 2	1 / 2 / 3 / 4
Number of inputs for thermo contact monitoring per pump	1 per pump	1 per pump	1 per pump	2 per pump
230V / AC output e.g. for heater or small compressor	•	•	•	•
Number of potential-free alarm relays	1 x	3 x 1 pump 3 x 2 pump	3 x 1 pump 3 x 2 pump	3 x 1-2 pump/ 6 x 3-4 pump
Float switch terminal for emergency operation function	○	•	•	○
Modular terminals for main supply	•	•	•	•
Modular terminals for pump connection	-	-	•	•
Possible level monitoring	CPS-L	CPS-B	CPS-B SA	CPS-M PLUS
1 float switch	•	•	•	1-2 pump
2 float switches	•	•	•	1-2 pump
3 float switches	-	•	•	1-2 pump
Separate high water float switch (positive pump actuation)	•	•	•	•
4-20mA analog input	•	•	•	•
Impact pressure method 0-2 m	○	○	○	○
Pressure switch connection	-	-	-	-
Adjustable control parameters	CPS-L	CPS-B	CPS-B SA	CPS-M PLUS
Run-dry monitoring	-	•	•	•
On / off switch levels	•	•	•	•
High water level / alarm level	•	•	•	•
Pump follow-up time	•	•	•	•
Load changeover time for pumps	-	•	•	•
Max. pump operating time (STOP + ALARM / ALARM)	•	•	•	•
Delay time between pump 1 and pump 2	-	•	•	•
Current measurement per pump	○	•	•	•
Turn on delay after a power failure	•	•	•	•
Short pump start against locking	•	•	•	•
Periodic emptying	•	•	•	•
Delay time high water	•	•	•	•
ATEX-Mode	•	•	•	•
Unit of measurement (mm, cm, mbar,...) selectable	-	•	•	•
Language selection	D / GB / NL / F / I	D / GB / NL / F / I	D / GB / NL / F / I	D / GB / NL / F / I
Date / time adjustable	•	•	•	•
Maintenance display	•	•	•	•
Compressor or agitator activation	-	•	•	•
Integrated time switch for compressor function	-	•	•	•
Phase drop monitoring (Ue=0V)	•	•	•	•
Phase sequence detection	•	•	•	•
Integrated buzzer (disconnectable)	•	•	•	•
Alarm relay, programmable function	-	•	•	•
Monitoring of the current limit value of the pump	○	•	•	•
Password protection	•	•	•	•
Operation and indication	CPS-L	CPS-B	CPS-B SA	CPS-M PLUS
LCD Display 2x16 illuminated signs Display	•	-	-	-
Backlit QVGA color touch screen	-	•	•	•
Graphics display / Icons	-	•	•	•
Plain text display	•	•	•	•
Menu navigation via QVGA touch screen	-	•	•	•
Menu navigation via 4 sensor keys	•	-	-	-
Hand-0-Automatic sensor keys for mode selection of the pumps	•	-	-	-
Hand-0-Automatic via touch screen	-	•	•	•
LED display for idle state	•	•	•	•
LED display for operating pump status	•	-	-	-
Operational fault LED display / buzzer	•	•	•	•
Display of all operating conditions via TFT-display	-	•	•	•
From outside operable manual motor starter	-	•	•	-
Transparent cover (lockable version available)	-	•	•	-
Cover locks in the open status	-	•	•	-
Motor current measurement and monitoring	○	•	•	•
Display operationg hours and switching cycles	•	•	•	•
Error list	•	•	•	•
Key lock	•	•	•	•
Operating and connection instructions	-	•	•	-
Connection diagram in the terminal compartment!	-	•	•	-

• Standard / ○ Option / - Not available



# PUMP CONTROLS

OF THE LATEST GENERATION

**NEW!**



Accessories	CPS-L	CPS-B	CPS-B SA	CPS-M PLUS
Battery modul (2x lithium battery)	-	○	○	○
Battery (2 x 9 V)	○	-	-	-
Number of Zener barriers	-	max. 2	max. 2	any number
LED module	-	-	-	○
Internal heater	-	-	○	○
Overload relays	○	-	-	-
Manual motor starter	-	●	●	●
Power contactors	●	●	●	●
Leak testing for pumps	-	-	-	○
Residual current devices (each pump / whole plant)	-	x <sup>1</sup>	x <sup>1</sup>	○
Voltmeter / Ammeter	-	-	-	○
Larger ABS-plastic housing	-	-	-	○
Metal housing	-	-	-	○
Key switch	-	-	-	○
Operating hour meter	-	-	-	○
Control transformer 400/230 VAC	-	-	-	○
H-O-A (manual mode - off- automatic mode)function by menu-oper	-	-	-	○
Telecontrol system - GSM-modem	-	○	○	○
Main circuit-breaker MCP	○	●	●	○
Telecontrol system - Ethernet Modul	-	○	○	○
Control module to control a compressor	-	○	○	○
With additional exit (400V)	-	-	-	○
PTC-Relais each pump control - analysis by the thermal contact.	-	x <sup>1</sup>	x <sup>1</sup>	○
Phase drop relay with undervoltage control	-	x <sup>1</sup>	x <sup>1</sup>	○
Analog output 4-20 mA	-	-	-	●
Different LED signal lamps	-	-	-	○
Lightning protection (fine, medium, large)	-	-	-	○
Emergency voltage supply	-	-	-	○
Input terminals greater than 4qmm	-	-	○	○
Pump start-up phase - direct starting	●	●	-	●
Pump start-up phase - star/delta starting	-	-	-	●
Pump start-up phase - soft starting	-	-	●	●
Pump start-up phase - frequency drive	-	-	-	○

● Standard / ○ Option / - Not available / x<sup>1</sup> on request

Level control technology

## Star/delta connection for the protective start of the motor



Fig. CSDU 7,5 complete

The Condor Pressure Control GmbH CSDU Star/delta connection offers, in due consideration of the relevant standards, the possibility of economically operating motors with a switching capacity greater than 4 kW using public mains networks.

With this 2-stage starter the inrush current (star circuit) is reduced by 1/3 of the height to be expected when starting the motor directly. The torque is equally reduced during start-up phase.

During the start-up phase (1 – 32 seconds), a special change-over relay with a contact switching time of 50 ms, guarantees reliable change over from star to delta operation.

During continuous operation, all motors connected to the Star/delta connection are protected by a manual motor starter with thermal and magnetic trip.

Standard executions contain a manual motor starter and an on / off switch for the control circuit. Complete star/delta connections additionally have a main circuit-breaker with enclosure locking, an emergency button, an hour meter and an operating LED.

Star/delta connections as standard-version with an additional transformer are used, if there is no neutral leader connected.

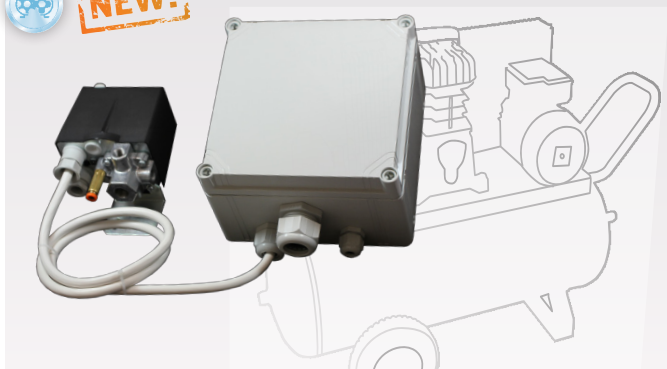
## Type overview CSDU

Order reference	Description	Weight (in g)	Part No.
<b>Complete version</b>			
CSDU 5,5 complete	5,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter: 9 - 13 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4100	256601
CSDU 7,5 complete	7,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 14 - 20 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4250	256618
CSDU 11,0 complete	11 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 19 - 25 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4400	256625
CSDU 15,0 complete	15 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 28 - 40 A (Rated current) Enclosure 300 x 400 x 140 mm (width x height x depth)	4550	256632
<b>Standard version</b>			
CSDU 5,5 standard	5,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 9 - 13 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	3500	256656
CSDU 7,5 standard	7,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 14 - 20 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	3650	256663
CSDU 11,0 standard	11 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 19 - 25 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	3800	256670
CSDU 15,0 standard	15 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 28 - 40 A (Rated current) Enclosure 300 x 400 x 140 mm (width x height x depth)	3950	256687
<b>Standard version with transformer (trafo)</b>			
CSDU 5,5 trafo	5,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 9 - 13 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4300	256717
CSDU 7,5 trafo	7,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 14 - 20 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4450	256724
CDU 11,0 trafo	11 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 19 - 25 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4600	256731
CSDU 15,0 trafo	15 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 28 - 40 A (Rated current) Enclosure 300 x 400 x 140 mm (width x height x depth)	4750	256748

Other manual motor starters on request.



## CSDU-M - Star/Delta Connection With Pressure Switch MDR 3



CSDU-M

The Star-delta connection is used in order to reduce high currents when starting electric motors. With this 2-stage starter the inrush current (star circuit) is reduced by 1/3 of the height to be expected when starting the motor directly.

The Condor Pressure Control CSDU offers the possibility to operate a motor until 7.5 kW using public supply networks. This control can be connected to a power supply without neutral leader!

The pressure switch MDR 3 included in the scope of supply replaces a contactor and can be delivered in different options.

The Condor Pressure Control star/delta with pressure with MDR 3 is registered at the German Patent and Trademark Office as utility model number 20 2015 104 249 .

For the star/delta connection special switches or contactor combinations are used. The pressure switch MDR 3 that has to be installed separately to the compressor of the new Condor Pressure Control star/delta CSDU-M serves as a so-called main contactor for this type of control. Thereby the contactor is not necessary anymore. The applied pressure switch MDR 3 can be used

in different pressure ranges and has a wide variety of optional accessories (e.g. unloader valves, on/off switch, phase sequence monitoring and phase drop monitoring, hourmeter kit, etc.). Both of the star/delta contactors as well as the star/delta change-over relays and the motor connecting clamps are built in a compact housing of the CSDU-M.

### STANDARD VERSION AND OPTIONS

- stable and **compact housing** (w 200 x h 240 x d 140 mm)
- completely pre-wired and **ready for connection**
- equipped with Condor pressure switch MDR 3, in function as main contactor (available in different variations - see main catalogue)
- **unloader valves**
- **ON-OFF-switch**
- **hour meter** (optional)
- **overload relay** (optional)
- **shunt release or undervoltage release** (optional)
- **phase sequence monitoring** and **phase drop monitoring** (optional)
- Other options available on request

Order reference	Description	Weight (in g)	Part No..
CSDU 7,5 - MDR 3	Condor Star/delta connection with pressure switch MDR 3	4000	286097

Technical Data CSDU 7,5 - MDR 3 to DIN EN 60947	
Operating voltage / supply line	400VAC 50 Hz; 3L/PE
Control voltage	400 VAC 50 Hz
Motor rating P1	7500W
Rated operational current I <sub>e</sub> max at 400 V AC 3	16A
Protection on site	20 A (träge)
Time range - transfer relay	0,5 - 32 sek.
Time star > delta	40ms

Technical Data CSDU-MDR 3 to DIN EN 60947	
Degree of protection	IP 54
Protection class	I
Temperature range (storage)	-20 °C to +70 °C
Operating temperature	0 °C...+50 °C
Permissible ambient humidity rel. humidity, non-condensing	10 % up to 90 %
Housing	ABS-plastic housing
Dimension (housing), cable glands	B200 x H240 x T140 mm

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\*Technical changes and mistakes reserve.





# Riding Arena Control System CRS

... intelligent and service-friendly!



## A riding arena without dust and mud – a dream come true!

Condor Pressure Control have developed "HippoGROUND", an intelligent and cost-saving control system which saves the operator and rider a lot of hassle with service and maintenance. Mud and dust in the riding arena as well as downtimes caused by the operation and maintenance of or defects in the sprinkler system are now a thing of the past.

The Condor riding arena control system CRS is used to automatically water and drain riding arenas and halls.

Whether indoor or outdoor, the control system provides a consistent surface moisture; thus the grounds remain elastic and are easy to maintain.

The optimal riding conditions in various weather conditions can speak for themselves. Even in heavy rain, the riding arena is always ready for use.

The comfort variation notifies the arena operators by text message of any errors and defects.

