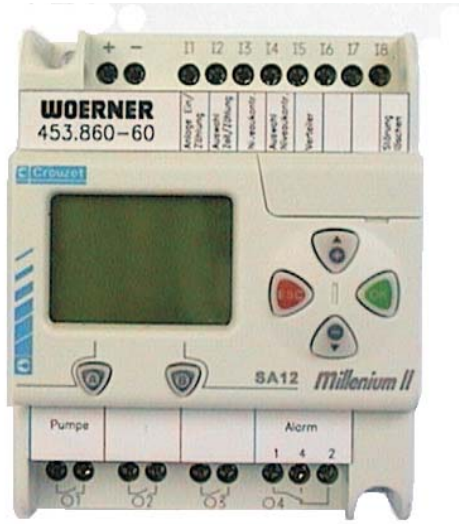
WOERNER
The Experts in Lubrication



Control Unit for the Progressive System No. 453.860

Application:
The control unit serves to control a progressive system.

The system is switched on via time or counting and switched off by means of the contact making of a lubricant checking facility.

Technical Data:

Power input:	3,5 W
Input voltage:	24VDC
	-15% bis +20%
	(Including residual ripple)
Voltage at inputs:	24 VDC
Response time at inputs:	5msec
Input resistance at inputs:	6,8 kR
Temperature range:	0 ÷ 50°C
Degree of protection:	IP 20
Contact data outputs:	max 250V AC
	30 VDC; 5A
Data protection:	10 years

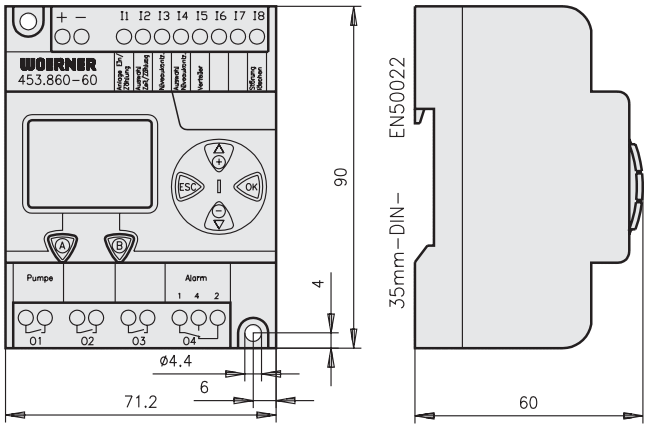
Functioning:
Upon control voltage switch-on- the unit will be ready for operation.

Input I1 - System ON / Count
The function of I1 depends on the switching condition of input I2 (time/count selection).

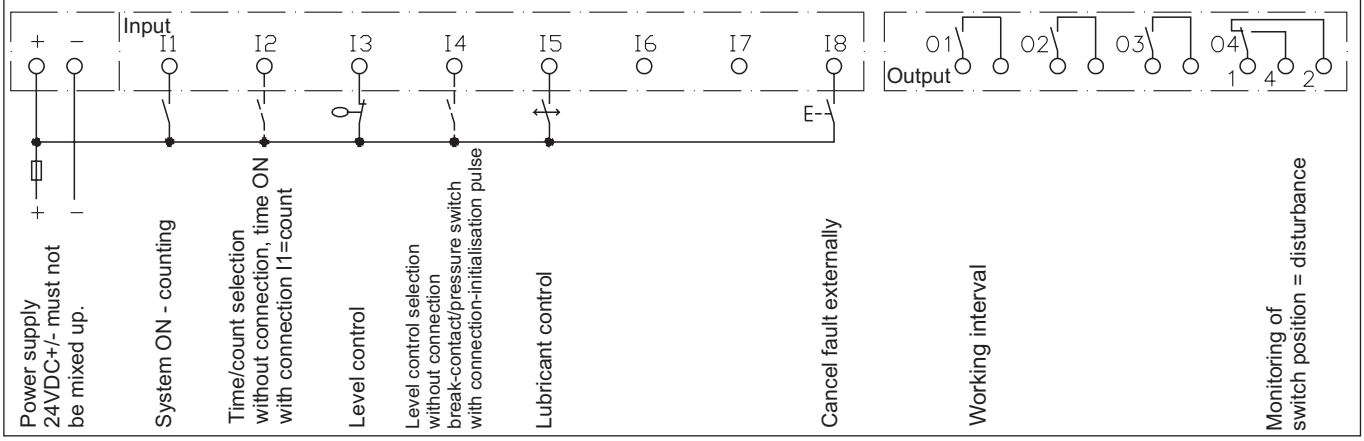
When input I2 is disconnected, the off-duty interval "time" is activated. In this function, input I1 can be used for machine run time-dependent control.
When contact is closed, internal time lapse will take place. Should contact open, time lapse is stopped. If such contact is not available, connection I1 has to be bridged.

When input I2 is connected (bridge I2/+), input I1 acts as counting input.

Dimension Drawing



Connection diagram



- Subject to modifications -

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Replaces No. 0483.04.03 EN

Off-Duty Interval Time:
Input I2 is disconnected.When contact "System ON" is closed, the internal counter "Off-Duty" counts up the internally generated minute cycles.

When nominal and desired values are matching, the working interval will be triggered, with the nominal value being reset. Upon voltage disconnection, nominal and desired values are stored.

Off-Duty Interval Count:
Input I2 is connected.
Input I1 acts as a counting input. An internal counter counts the signals at I1 up.

When nominal and desired values are matching, the working interval will be triggered, with the nominal value being reset. Upon voltage disconnection, nominal and desired values are stored.

Working Interval:
Any signal change at lubricant checking device I5 of the progressive distributor means that lubricant is proportioned at all outlets of this distributor.
Signal changes are count. After completion of the programmed number of signal changes (distributor rotations), working interval will be finished. Upon unit delivery, the counter is preset to 1.

During working interval, the potential-free contact "Q1" is closed. Depending on the type of system available, a motor contactor or solenoid valve can be connected to this contact.

Working Interval Monitoring:
Duration of the working interval is monitored. If working interval, within the time programmed, is not finished by means of the signals coming from the lubricant checking device, a fault message is released.

Fault will be stored, whilst triggering of the Q1 output is discontinued and Q4 alarm output switches. When leaving factory, monitoring time is preset to 300 seconds. (Monitoring time = time required for one distributor rotation * number of distributor rotations programmed + safety reserve)

Level Checking Facility Input I3:
Depending on the connection of input I4, various level checks can be evaluated.

When input I4 is disconnected, ordinary level switches (break-contact at minimum) or pressure switches (close-contact at pressure) can be used. In the absence of level switches, connection I3 has to be bridged with +.

Should input I4 be connected (connection to +), initiators can be used that release pulses in case of fault. Both types are monitored with a delay of 5 seconds during pump operation only.

Concurrently, the fault message is stored, the triggering of the pump's motor discontinued, and the alarm output switched.

Alarm Output O4:
Upon release, the potential-free contacts O4/1 and O4/4 are closed, whilst O4/1 and O4/2 are open. In case of fault and absence of supply voltage, switching condition is reverse.

Fault Cancellation:
The faults "lubrication" and "level at minimum" are stored. Such storage can be cancelled by disconnecting the supply voltage or actuating either external switch I8 or internal switch. (A)

Initiators:
Instead of contacts, initiators can be used at any input. Such initiators have to belaid out for 24VDC, three-wire operation, and PNP output.

Hand-ON:
When function is set to off-duty interval (off-duty time), the working interval (working time) can be initiated by pressing the switch. ⊕

Hand-OFF:
When function is set to working interval (working time), the off-duty interval (off-duty time) can be initiated by pressing the switch. ⊖

Display Information

During off-time interval (off-time in minutes or number of pulses, actual value, target value)
off-time/pulses-min/actual value/target value

During working interval (distributor rotations actual value, target value)
work/distributor rotations/actual value/target value

In case of working interval monitoring fault
fault/work

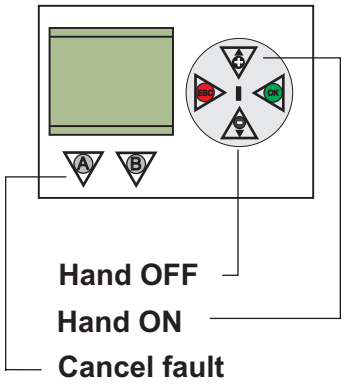
In case of level monitoring fault
fault/level

In case of off-time target value adjustment (ajdustable between 1 and 32767 pulses or minutes)
off-time XXXXX

In case of working interval target value adjustment (ajdustable between 1 and 32767 distributor rotations)
distr. XXXXX

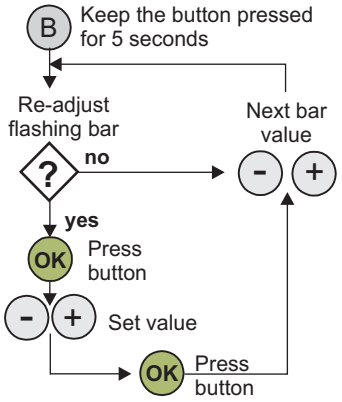
In case of working interval target value adjustment (ajdustable between 1 and 32767 seconds)
Monit. XXXXX

Operation



Desired value adjustment

The desired values can be adjusted as follows:



Setting mode will be finished automatically after 1 minute, when re-adjustment was completed by pressing OK (flashing bar)

Caution! Do not set any zero or negative value!

Order designation:
Control Unit for the progressive system
Display: DE 24 VDC **453.860-60**
Display: GB 24 VDC **453.860-61**

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