WOERNER
The Experts in Lubrication

Control Unit for the Progressive System No. 453.876-60

Application:
The control unit serves to control a progressive system with 3 lubricaton points max.

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:

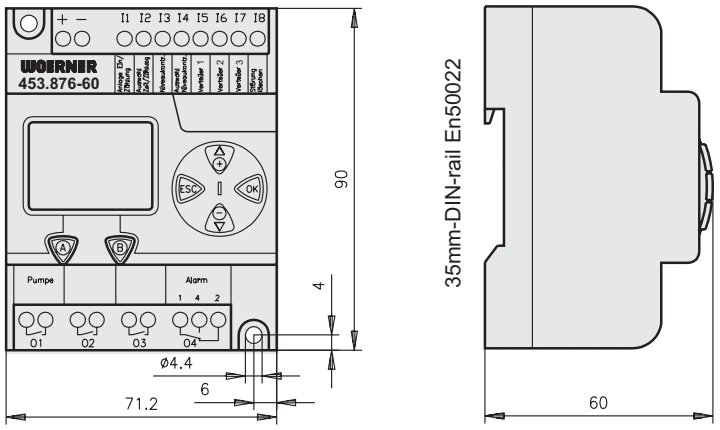
Power consumption:	3,5 W
Input voltage:	24VDC
	-15% bis +20%
	(including residual ripple)
Voltage input:	24 VDC
Response time at inputs:	5msec
Input resistance at inputs:	6,8 kR
Temperature range:	0...50°C
Protection type:	IP 20
Contact data outputs:	max 250V AC
	30 VDC; 5A
Data protection:	10 years

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

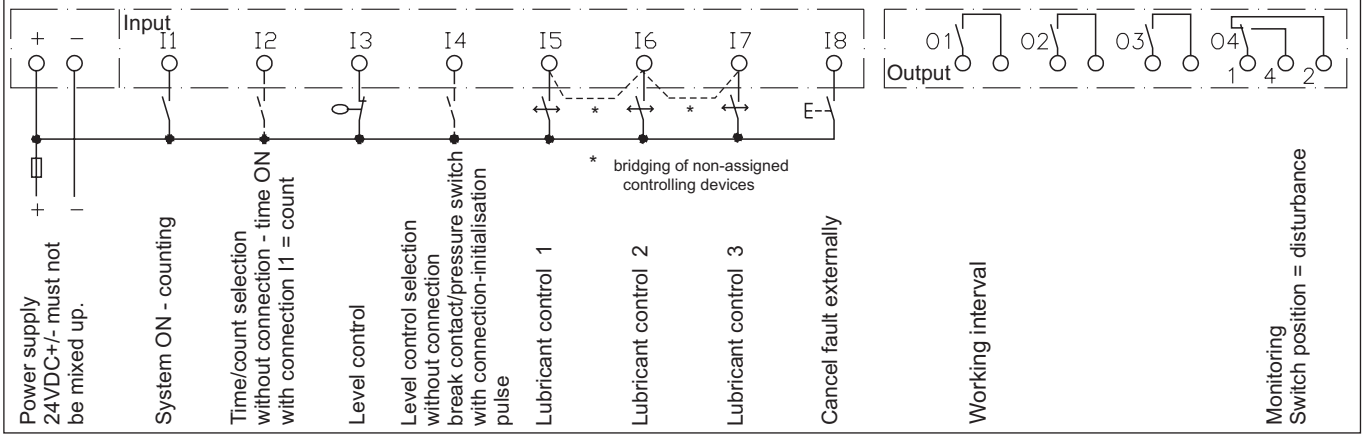
Input: I1 System ON/counting:
The function of I1 depends on the switching condition of input I2 (time/count selection). When input I2 is disconnected, the off-duty interval “time” is activated. In this function, input I1 can be used for machine run time dependent control. When contact is closed, internal 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.

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 treggered, 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 controlling devices 15, 16, and 17 means that lubricant is proportioned at all outlets of distributors nos. 1-3. These signal changes are counted. Every lubricant controlling device is fitted with its own internal counter. After completion at all counters of the programmed number of signal changes (distributor rotations), working time will be finished. Non-assigned controlling devices need to be bridged at the unit itself. Target values of the bridged inputs are adjusted to the same value. When leaving the factory, the units' counters are set 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:
The working interval's duration is monitored. If within programmed time, the counter target values are not achieved through the signals of the lubricant controlling devices, a fault message will be released.

Such fault is stored then. At the same time, actuation of output O1 is discontinued, and alarm output O4 will switch.
Before unit shipment, monitoring time is set to 300 seconds. (Monitoring time means the time when all counter readings from 0 to target value are reached increased factor of safety).

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

When input I4 is dixconnected, 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 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, an the alarm output switched.

Alarm Output O4:
Upon release, the potenial-fee contacts O4/1 und 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. Ⓐ

Initiators:
Instead of contacts, initiators can be used at any input. Such initiators have to belaid out for 24VDC, three-wire operaton, 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 1÷3)
working impuls / Distributor 1 / Distributor 2 / Distributor 3.

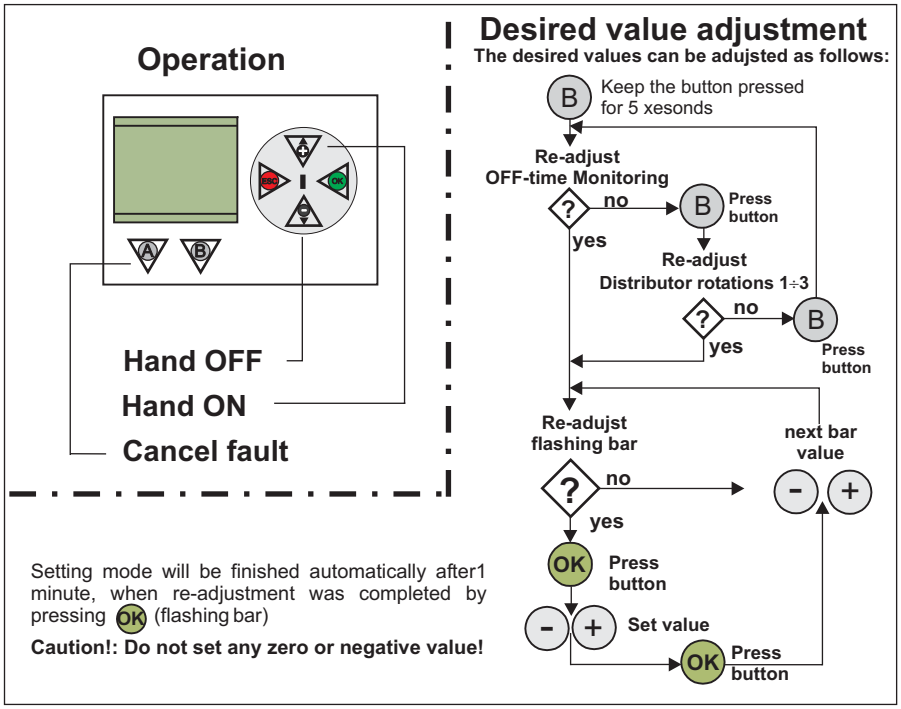
In case of working interval monitoring fault
fault /Distributor 1/Distributor 2/Distributor 3.

In case of level monitoring fault
fault/level.

In case of off-time target value adjustment
(adjustable between 1 and 32767pulses or minutes).
OFF.time /XXXXX min/pulses.

In case of distributor rotations 1÷3 target value adjustment
(adjustable between 1 and 32767distributor rotations)
Distributor/1:XXXXX/2:XXXXX/3:XXXXX

In case of working interval target value adjustment
(adjustable between 1and 32767 seconds)
Monit./ XXXXXsec



Setting mode will be finished automatically after1 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: D
24 VDC **453.876-60**

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