Power management - ECO8 series

- ☞ Installation design
- ☞ Width 157.5mm
- ☞ Maximum load controller
- ☞ Real time clock (ECO-8IIT only)
- ☞ 8 normally open and 1 normally closed contacts

☞ Technical data

☞ 1. Functions
Maximum load controller including trend analysis via time integration method and adaptive PI-control-function without blocking time.

☞ 2. Time ranges
Min. turn-on time for channels 1 to 4	00min 00s to 19min 50s
Min. turn-off time for channels 1 to 4	00min 00s to 19min 50s
Max. turn-off time for channels 1 to 4	00min 00s to 19min 50s
Cycle time for channels 5 and 6	0min 00s to 7min 50s

☞ 3. Indicators
Green LED ON:	indication of supply voltage
Yellow LED ON/OFF:	indication of relay output
Red LED ON:	advance warning

☞ 4. Mechanical design
Self-extinguishing plastic housing, IP rating IP40
Mounted on DIN-Rail TS 35 according to EN 50022
Mounting position: any
Shockproof terminal connection according to VBG 4, IP rating IP20
Initial torque: max. 1Nm
Screw terminals:
   1 x 0.5 to 2.5mm² with/without multicore cable end
   2 x 0.5 to 1.5mm² with/without multicore cable end
Display: two-lined LCD (alphanumeric) 16 characters in each line

☞ 5. Input circuit
Supply voltage:	230V AC	terminals A1-A2
Tolerance:	-15% to +10%	
Rated frequency:	45 to 65Hz	
Rated consumption:	6VA	
Duration of operation:	100%	
Reset time:	-	

☞ 6. Output circuit
8 potential free normally open contacts
   4 channels with presettable ON- and OFF-time as well as priority preselection (selectable from 1 to 6)
   2 channels with adjustable cycle time as well as priority preselection (selectable from 1 to 6)
   1 fixed channel (immediately switching if adjusted threshold is reached)
   1 advance warning channel (warning before control-function is activated)
      can be used as an additional switching channel without priority preselection also
1 potential free normally closed contact
   Fault output (relay in on-position if supply voltage fails or another fault is detected)
Switching capacity:	690VA (3A / 230V AC)
Fusing:	-
Mechanical life:	20 x 10^6 operations
Electrical life:	2 x 10^5 operations at resistive load
Switching frequency:	max. 60/min at 100VA resistive load max. 6/min at 1000VA resistive load (according to IEC 947-5-1)
Rated voltage:	250V AC (according to IEC 664-1)
Surge voltage:	4kV, overvoltage category III (according to IEC 664-1)

☞ 7. Control input Leist
Function:	power impulse from counter
Connections:	potential free, terminals 28-29
Type:	S0 (according to DIN 4364)
Switching current:	15mA DC
Tolerance:	+10%
Switching voltage:	24V DC
Tolerance:	+10%
Frequency:	max. 25Hz
Line length:	-
Control pulse length:	-

☞ 8. Control input Sync
Function:	synchronising impulse from electric board
Connections:	potential free, terminals 30-31
Type:	S0 (according to DIN 4364)
Switching current:	15mA DC
Tolerance:	+10%
Switching voltage:	24V DC
Tolerance:	+10%
Frequency:	impulse, length 6s (nominal) every 10 to 99min
Line length:	-
Control pulse length:	-

☞ 9. Control input Tarif
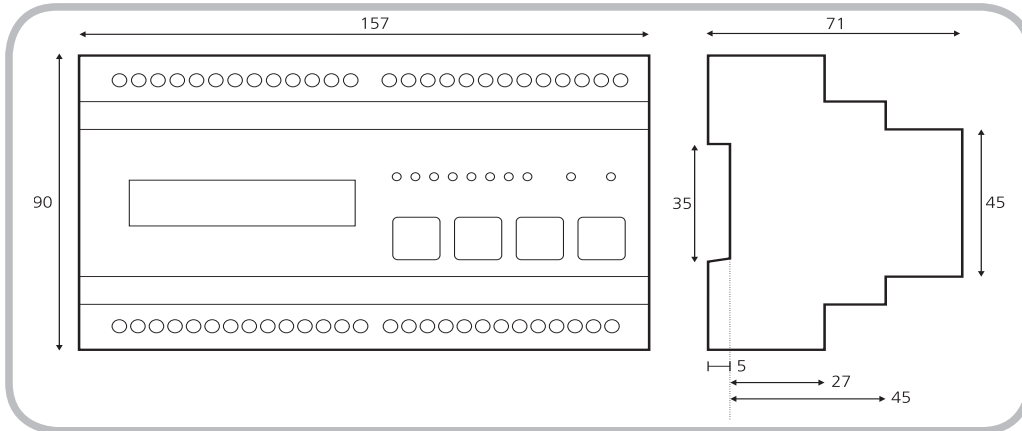|	
Function:	impulse for tariff-changeover from electric board
Connections:	potential free, terminals 32-33
Type:	S0 (according to DIN 4364)
Switching current:	15mA DC
Tolerance:	+10%
Switching voltage:	24V DC
Tolerance:	+10%
Frequency:	-
Line length:	-
Control pulse length:	-

☞ 10. Accuracy
Base accuracy:	accuracy of calculation depends on the number of impulses
Adjustment accuracy:	-
Repetition accuracy:	-
Voltage influence:	-
Temperature influence:	-

☞ 11. Ambient conditions
Ambient temperature:	-25 to +55°C (according to IEC 68-1)
Storage temperature:	-25 to +70°C
Transport temperature:	-25 to +70°C
Relative humidity:	15% to 85% (according to IEC 721-3-3 class 3K3)
Pollution degree:	2, if built in 3 (according to IEC 664-1)

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☞ Dimensions

☞ Functions

Maximum load control
ECO-8II(T) is a microprocessor-controlled switching device that uses load trend analysis to minimise load peaks without any noticeable loss of user convenience. It does this by disconnecting and recon-necting different loads via 8 potential free relay outputs as soon as the adjustable regulation thresholds are exceeded. To achieve a high level of efficiency, around 40% of the total output of the system should be switched via ECO-8II(T).
To allow different types of load to be regulated, two output channels of the ECO-8II(T) are designed as cycle-mode channels. Minimum and maximum disconnection times and a minimum con-nection time can be set for four further channels to avoid excessive on/off switching of the connected devices. There are also one instantaneous contact and one advance warning contact. The war-ning channel can be changed to a second instantaneous contact by inverting it with the aid of a relay. The allocation of priorities defines the sequence in which the channels are disconnected. ECO-8II(T) determines the consumption within a period of time defined by the electric board. It synchronises with the synchronisa-tion impulse emitted by the counter provided by the public utility company. The measured data for the present consumption are read from the counter into ECO-8II(T) using meter impulses. By entering the ratio of the impulses emitted by the counter per kWh and the transformer ratio, the ECO-8II(T) can be set to all usual counter/instrument transformer combinations.
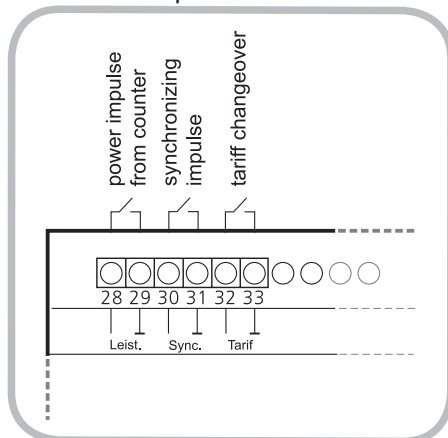
Time switch function
In addition to the maximum load controlling, ECO-8II(T) has the option of switching channels 1-6 individually on a time-of-day or date basis irrespective of the control situation at the time. A real-time clock is integrated into the device for this purpose. 6 different switching times and 10 functions can be assigned to each channel:

- Channel ON (from - to)
- Channel OFF (from - to)
- Channel ON on a weekday (Mon-Sun) (from - to)
- Channel OFF on a weekday (Mon-Sun) (from - to)
- Channel ON on date (from - to)
- Channel OFF on date (from - to)
- Channel has priority (from - to)
- Channel has priority on a weekday (from - to)
- Channel has priority on date (from - to)
- Tariff changeover: This function is selected if there is no changeover impulse from the electric board

☞ Connections

☞ Control input

☞ Output

contactors

supply voltage
230V~ (100V~) 50-60Hz
Fusing: 2A

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