UNIT FOR TIMED ON-OFF CONTROL & ACQUISITION ALARMS

T 211
08.04.04 LB

C ←BUS

UCO 638 Eng.

• **3 relay outputs for timed control**
• **3 digital inputs for signalling alarm or status**
• **Communication systems: :**
  – **C-Bus** for telemanagement
  – **RS 232** for direct connection to PC or modem
• **Power supply 230 V~ , DIN rail mounting**

CE

1. APPLICATION

Designed for use in telemanagement systems for On-Off control of three electrical devices with 24hour or 7day timed event programs and for acquiring max. three alarm or status signals.

2. OVERALL DIMENSIONS
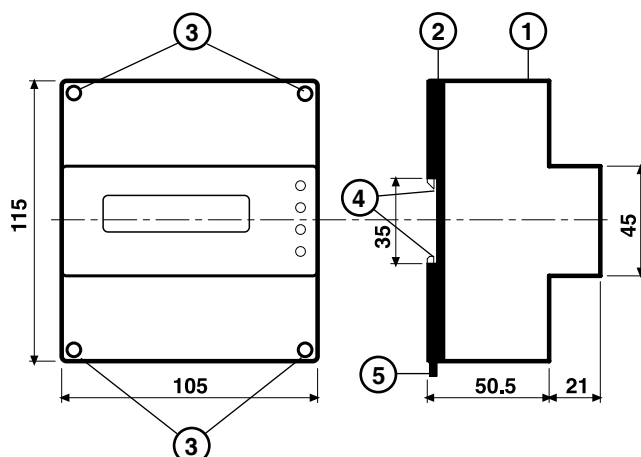
1 – Protective cover for electronic components
2 – Base with transformer, relay and terminal blocks
3 – Screws for securing base and cover
4 – DIN rail securing elements
5 – DIN rail release lever

3. FACIA
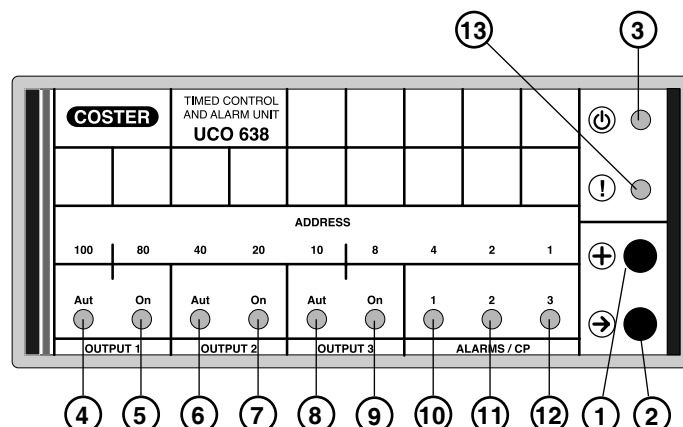
1 – Key for changing parameters
2 – Key for displaying parameters
3 – Power supply LED
    LEDs outputs 1 – 2 – 3:
    4, 6, 8 – Lit = Automatic; Off = Manual
    5, 7, 9 – Lit = On ; Unlit = Off
    Signalling alarms:
    10, 11, 12 – Alarms k1, k2, k3 or closure switches cp1-2-3
    13   – Alarm for fault unit
    Signalling address:
    4   – Hundreds
    5…8 – Tens
    9…12 – Units

4. TECHNICAL DATA

Power supply	230 V~ ± 10%
Frequency	50 Hz
Consumption	3 VA
Protection	IP40
Radio disturbances	VDE0875/0871
Vibration test	with 2g (DIN 40 046)
Construction standards	Italian Electrotech. Committee (CEI)
Enclosure	DIN 6E module
Mounting	on DIN 35 rail
Materials:	
Base	NYLON
Cover	ABS
Ambient temperature:	
Operating	0 ... 45 °C
Storage	– 25 ... + 60 °C
Ambient humidity	Class F DIN 40040
Weight	0.42 kg

Outputs	3
Inputs for control outputs :	
Extension button **ce**	3
On switch **co**	3
Change program switch **cp** (as alternative to **k**)	3
Inputs for alarms or status **k** (as alternative to **cp**)	3
Signalling alarm :	– with switch closed
	– with switch open
Delay acquiring alarm	0…**1**...255 min.
Programs & periods for each output & for each input:	
24hour programs	**1**…15
On times	**1**...6
Off times	**1**...6
7day programs	**0**…7
Annual programs	**0**…15
Extension button	1…**60**…255 min
Telemanagement address	**1**…199

5. WIRING DIAGRAM
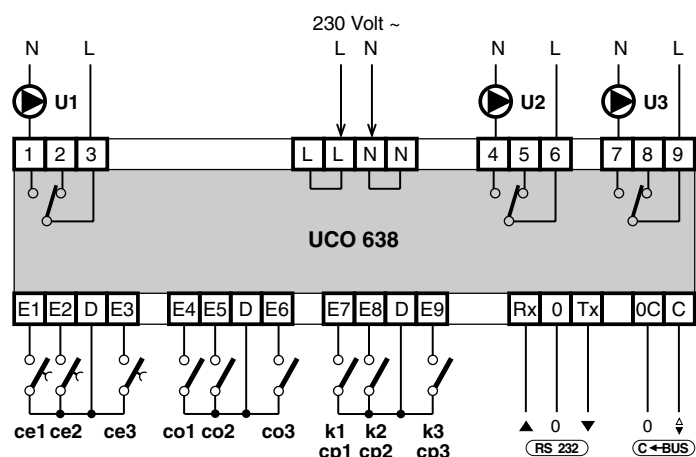
U1 – Output 1 : On = 1-3 closed, 2-3 open
              Off = 1-3 open, 2-3 closed
U2 – Output 2 : On = 4-6 closed, 5-6 open
              Off = 4-6 open, 5-6 closed
U3 – Output 3 : On = 7-9 closed, 8-9 open
              Off = 7-9 open, 8-9 closed
ce 1-2-3 – Extension button
co 1-2-3 – On controls
cp 1-2-3 – Controls for changing program (as alternative to k 1-2-3)
 k 1-2-3 – Alarm or status switches (as alternative to cp 1-2-3)
RS 232 – Transmission telemanagement data (as alternative to C-Bus)
 C-Bus – Transmission telemanagement data (as alternative to RS 232)

Priority external controls: 1st co ; 2nd ce ; 3rd cp.

6. INSTALLATION

UCO 638 must be installed in a dry space that respects the relevant environmental conditions included under 4.Technical Data. If installed in a location classified as "Hazardous" it must installed in a cabinet for electrical equipment constructed according to the regulations in force for the class of danger concerned.
It can be mounted on a DIN rail or in a DIN modular enclosure.

7. WIRING

Proceed as follows :
• Separate base from cover after having loosened the securing screws
• Mount the base on the DIN rail and check that it is firmly anchored by the securing elements (2.4)
• Carry out the wiring according to the diagram and in compliance with current electrical regulations using :
    – 1.5 mm^2 wires for power supply and relay control outputs.
    – 1 mm^2 wires for input switches.
    – 1 mm^2 for C-Bus and RS 232. For length limits see data sheet T 021.
• Apply power (230 V~) and check its presence across terminals L and N.
• Remove power, replace cover on base/terminal block and secure it with the four screws supplied (2.3).

You are advised not to insert more than two cables in a single terminal of the controller and, if necessary, to use an external junction box

8. COMMUNICATION

8.1 C-Bus communication for telemanagement (for detailed information see data sheet T 021)

UCO 638 must be connected via C-Bus output or RS 232 output to a telemanagement system (local PC and/or modem),

8.2 C-Bus electrical connections
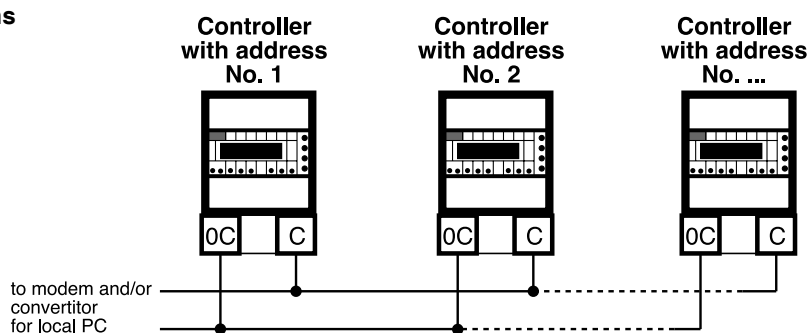
8.3 Address for telemanagement

In telemanagement, in order that the controllers can be identified by the central PC and/or local PCs, they must be assigned a numerical address (see. 9.4) :

8.4 Data recording

UCO 638 records a series of data indicative of the operational status:
    – at each change of status of the control outputs
    – at each change of status of the On-Off inputs
Each recording contains:
    – Actual time, day and type of recording (switching on unit and change status of outputs).
    – Current program, mode and status of control outputs
    – Status of On-Off inputs
It can store 170 complete recordings and the last recording brings about the cancellation of the oldest one. Moreover, it is possible to set the number of recordings to be displayed.

9. OPERATION

UCO 638 can handle :
- three relay outputs **U1**, **U2** and **U3** for timed On-Off control, using for each output::
  - fifteen 24hour programs and seven 7day programs; - fifteen annual periods with dates.
  - one timed Extension program via external switch **ce** 1-2-3.
  - one On control via external switch **co** 1-2-3.
  - one program via external control **cp** 1-2-3.
- three On-Off inputs **k1, k2, k3** for signalling alarms or status, programmable with times via switch closed or open, using for each input :
  - fifteen 24hour programs and seven 7day programs; - fifteen annual periods with dates.

9.1 Telemanagement PC

From the telemanagement PC you can :
- Enter the current time (automatic or manual setting BST/GMT). day of week and date.
- For each of the three relay outputs (U1-2-3) :
  - Display status of output relays ;
  - Enter name of output.
  - Select operating program Manual/Automatic for each output :
    - Manual: - On; - Off.
    - Automatic: - 24hour 1…15; - 7day 1…7; - On; - Off.
  - Enter 24hour programs for each output :
    - number of programs to be used (1…15) ;
    - times of On and Off (max. 6+6) for each program.
  - Enter 7day programs for each output :
    - number of programs to be used (0…7);
    - program for each day of the week: 24hour 1…15; On; Off.
  - Enter annual periods for each output :
    - number of annual periods to be used (0…15) ;
    - dates of start and end of each period ;
    - program for period:7day 1…7; 24hour 1…15; On; Off.
  - Enter operation of Extension control **ce** for each output:
    - enable switches **ce** 1-2-3 connected (not operational in Manual mode) ;
    - enter duration (minutes) of Extension period (On) for each output ;
  - Enter operation of On control **co** for each output :
    - enable switches **co** 1-2-3 connected (not operational in Manual mode);
    - enter type of action of each **co** switch (On with switch closed or open).
  - Enter operation of Change Program control **cp** (as alternative to **k** 1-2-3) for each output. :
    - enable switches **cp** 1-2-3 connected (not operational in Manual mode);
    - select program to set by closure of **cp** control for each output. ;

- For the three alarm inputs (**k** 1-2-3) :
  - Enter number of inputs used (as alternative to **cp** 1-2-3) and the name of each input.
  - Display status of each switch (always available).
  - Enable use of each input as Alarm.
  - Enter type of action of each alarm switch (alarm with switch closed or open).
  - Enter delay for acquisition of each alarm.
  - Enable sending end of alarm.
  - Select program for enabling each single alarm :
    - 24hour 1…15 ; - 7day 1…7 ; - Input enabled; - Input disabled.
  - Enter 24hour programs for each single alarm :
    - number of programs to be used (1…15)
    - On and Off times (max. 6+6) for each program
  - Enter 7day programs for each single alarm :
    - number of 7day programs to use (0…7)
    - program for each day of week: 24hour 1…15; On; Off.
  - Enter annual periods for each single alarm :
    - number of annual periods to be used (0…15)
    - dates of start and end of each period; ;
    - program for period: 7day 1…7; 24hour 1…15; On; Off.
  Sending alarm is indicated by lighting in sequence of output LEDs.

9.2 Facia

The UCO 638 facia :
- Signals the operational status of outputs 1, 2 and 3 with three pairs of **Aut** (3.4.6.8) and **On** (3.5.7.9) LEDs:
  Aut : - On = automatic operation with timed programming set by telemanagement PC.
  - Off = manual operation.
  - Flashing = Extension control **ce** enabled
  On : - lit   = output On (1:1-3 closed, 2-3 open; 2: 4-6 closed, 5-6 open; 3: 7-9 closed, 8-9 open).
  - unit   = output Off (1:1-3 open, 2-3 closed; 2: 4-6 open, 5-6 closed; 3: 7-9 open, 8-9 closed).
- Signals with the three **Alarm** LEDs (3.10.11.12) the status of switches **k** 1-2-3 or **cp** 1-2-3 (for switch closed or open according choice by PC):
  LED off   = no alarm alarm status.
  LED lit   = alarm status received.
  LED ashing   = alarm being received.

9.3 Procedure for setting telemanagement address (1…199)

Press →for 10 seconds: "Address" LEDs (3.4…12) flash (after five seconds the three Alarm LEDs ash)..

Release → : the LEDs representing the address previously set remain lit: :

     LED "100" (3.4) Off = below 100, lit = 100 or above 100.

     LED "80-40-20-10" (3.5…8) lit represent (total) of tens (e.g. "80" & "10" lit = 90)

     LED "8-4-2-1" (3.9…12) lit represent (total) units (e.g. "4" and "2" lit = 6)

Press → :   LED "100" (3.4) ashes with brief lit periods = address below 100.

     LED "100" (3.4) ashes with long lit periods = address is 100 or above 100.

     To change use + key.

Press → :   LED "80-40-20-10" (3.5…8) : those lit and ashing represent (total) the tens of the address previously set. To change use + key; to each depression of key a ten is cyclically added.

Press → :   LED "8-4-2-1" (3.9…12) : those lit and ashing represent (total) the units of the address previously set. To change use + key.

Press → until all the LEDs ash: address memorized and exit the addressing procedure.

To exit without memorizing the address wait about 30 seconds without pressing any key.

9.4 Procedure for testing the outputs

Press → for 5 seconds: LED **Alarms 1 2 3** ash. Release → : LEDs ash in sequence.

If for 30 seconds no key pressed you exit the testing procedure.

Press → :   LED **Output 1 On** ashes (short lit times): Output 1 = Off.

Press + :   LED **Output 1 On** ashes (long lit times): Output 1 = On.

     At each depression of + key the output changes status.

Press → :   LED **Output 2 On** ashes (short lit times); Output 2 = Off.

Press + :   LED **Output 2 On** ashes (long lit times); Output 2 = On.

     At each depression of + key the output changes status.

Press → :   LED **Output 3 On** ashes (short lit times); Output 3 = Off.

Press + :   LED **Output 3 On** ashes (long lit times); Output 3 = On.

     At each depression of + key the output changes status.

Press → for 5 seconds: LED **Alarms 1 2 3** ash: End testing procedure.

9.5 Procedure for local control of the outputs

Press → :   LED **Output 1 Aut** ashes.

     Press +: if already lit (Automatic) goes out (Manual) or vice versa, leave in the desired condition.

Press → ,   if LED Output 1 Aut is lit (Automatic): LED **Output 2 Aut** ashes

     if LED Output 1 Aut is off (Manual): LED **Output 1 On** ashes

     Press +: if already lit (On) goes out (Off) or vice versa; leave in the desired condition.

Press → :   LED **Output 2 Aut** ashes.

     Press +: if already lit (Automatic) it goes out (Manual) or vice versa; leave in the desired condition.

Press → ,   if LED Output 2 Aut lit (Automatic): LED **Output 3 Aut** ashes

     if LED Output 2 Aut unlit (Manual): LED **Output 2 On** ashes

     Press + :if it was lit (On) it goes out or vice versa; leave in desired condition.

Press → :   LED **Output 3 Aut** ashes.

     Press + : if it was lit (Automatic) it goes out (Manual) or vice versa; leave in desired condition.

Press → ,   if LED Output 3 Aut is lit (Automatic): End manual operations

     if LED Output 3 Aut is off (Manual): LED **Output 3 On** ashes

     Press + : if it was lit (On) it goes out (Off) or vice versa; leave in desired condition.

Press → :   End manual operations.

9.6 Returning to factory settings

To return to factory settings, switch off power to the unit and then re-power it keeping pressed + and → keys.

9.7 Emergency program

To enable the timed Extension program press the external button **ce** for at least two seconds; to interrupt, press it for at least 15 seconds.

9.8 Alarm timer

In the event of a fault in the internal clock, all the unit LEDs ash, an alarm is sent to the telemanagement PC and Manual operation is imposed on the outputs with the relative program On or Off pre-set.