

## Digital recorder 8 events inputs

- Records event, i.e. digital changes of state
- Detects on/off or off/on transitions or both
- Accepts a wide range of signals (voltage, dry contact, etc)
- Long battery life (up to 2 years)
- Easy to connect and use
- Associated software allows display of Real time data



The DL400E is suitable for applications involving signals with only two states (on/off states, open/closed contacts, 0/1 logical states) and only records the state changes.

When a change is detected the date, time and state are stored into the logger's memory.

From the list of recorded events, the duration between changes, frequency of events and time % ON-state can be determined over selectable periods.

## Applications

- Monitor sporadic or momentary contact closures (relay, switch, etc).
- Time of use and on/ off cycles of fans, motors, air conditioners, pumps, heaters, etc.
- Energy management and load profiles
- Rainfall logging
- Access surveys

## DL400E recorders and accessories:

DL400E	: 8 event inputs, 2.000 events memory capacity.	D9-2FM	: PC connection cable.
CI8xV	: connection cable for 8 inputs, 2m.	RDFIX	: DIN rail mounting adapter
-EXT	: Memory extension to 8.000 events.	μLOGDLE	: DL400E Windows software

# μLOGDLE Software

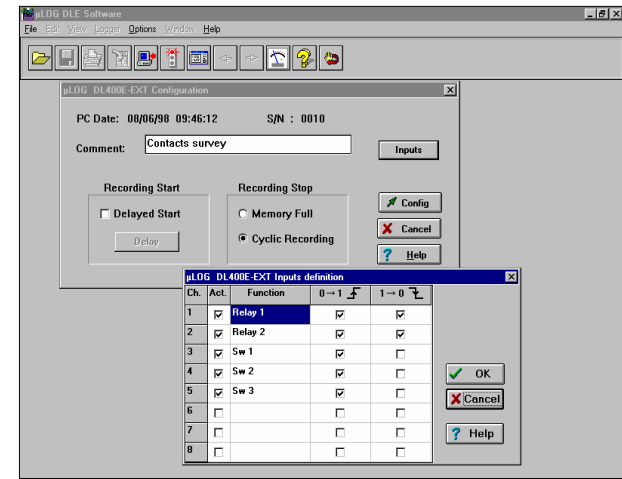
The μLOGDLE Windows software allows for configuration of the DL400E recorders and is used to process the recorded measurements.

## Configuration (➤):

For each input, it is possible to select individually the event detection condition (0->1, 1->0 or both), depending of the application.

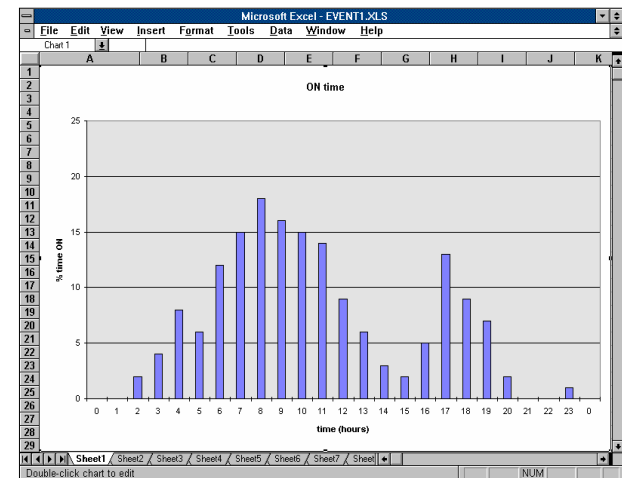
Record name : Contacts survey  
Serial number : 0010  
First event D/T : 08/06/98 08:16:04.23  
Last event D/T : 08/06/98 08:23:44.11  
#Events (Total) : (138) 61 17 20 8

Ch	DD/MM/YY	HH:MM:SS.hh	Relay	Sw 1	Sw 2	Sw 3	Duration
1	08/06/98	08:16:04.23	↓	0	0	0	000:00:00:00.00
2	08/06/98	08:18:28.12	↓	0	0	0	000:00:02:23.89
3	08/06/98	08:18:33.62	↓	0	0	0	000:00:05:30.00
4	08/06/98	08:18:34.65	↓	0	0	0	000:00:01:03.00
5	08/06/98	08:18:37.02	↓	0	0	0	000:00:00:02.37
6	08/06/98	08:18:37.61	↓	0	0	0	000:00:00:00.59
7	08/06/98	08:18:39.39	↓	0	0	0	000:00:00:01.70
8	08/06/98	08:18:44.42	↓	0	↑	0	000:00:00:05.03
9	08/06/98	08:18:48.34	0	0	0	↑	000:00:00:03.52
10	08/06/98	08:18:51.16	0	0	0	↑	000:00:00:02.82
11	08/06/98	08:18:51.84	0	0	↑	0	000:00:00:00.68
12	08/06/98	08:18:53.27	0	0	0	↑	000:00:00:01.49
13	08/06/98	08:18:54.18	0	0	0	↑	000:00:00:00.91
14	08/06/98	08:19:01.18	↓	0	0	0	000:00:00:07.00
15	08/06/98	08:19:02.39	↓	0	0	0	000:00:00:01.21
16	08/06/98	08:19:03.74	0	↑	0	0	000:00:00:01.35
17	08/06/98	08:19:03.85	0	0	0	0	000:00:00:00.11
18	08/06/98	08:19:04.08	0	0	0	0	000:00:00:00.23
19	08/06/98	08:19:04.24	0	0	0	0	000:00:00:00.16
20	08/06/98	08:19:04.37	0	0	0	0	000:00:00:00.13
21	08/06/98	08:19:04.66	0	0	0	0	000:00:00:00.29
22	08/06/98	08:19:04.76	0	0	0	0	000:00:00:00.10
23	08/06/98	08:19:04.92	0	0	0	0	000:00:00:00.16
24	08/06/98	08:19:05.02	0	0	0	0	000:00:00:00.10



## Processing (◀) :

The detailed events list is presented with date/time, inputs states and duration between events.



Statistical results can be exported for further (➤) analysis in spreadsheet programs (EXCEL, LOTUS,...). Two sets of results are available:

- list of number of events/ (selectable) time unit, E.g. rainfall (mm/hour) logging or frequency of contact closure (#/day) logging.
- list of time% 1 (or 0) state/ (selectable) time unit, E.g. time of use of motors, pumps, lighting, etc...

# Technical specifications

- **Inputs:** 8 - digital.
- **Input signals:** voltage (max 28V) or dry contact (contact power supply from the DL400E).
- **Input impedance:** 100 kΩ.
- **Input levels:** - low (level 0): between 0 and 0.5V, - high (level 1): between 2.5 and 28V.
- **Event detection:** levels 0 to 1, 1 to 0 or both transition(s) selectable for each input.
- **Minimum time between two events:** 50 milliseconds.
- **Time resolution:** 10 milliseconds.
- **Power supply:** mixed - lithium internal battery and/or supply from the RS232 connection.
- **Battery autonomy:** up to 2 years typical.
- **Memory capacity:**
  - DL400E : 16 kb: 2.000 events.
  - DL400E-EXT : 64 kb: 8.000 events.
- Stop on memory full or overwrite oldest records.

- Download without interruption of recording process
- Software: under Windows (95, 98, NT2000, NT4, XP) : recorder configuration - download and save Data, display events list, export recordings to spreadsheets (EXCEL, LOTUS, etc...)
- **Delayed Recording:** start on chosen date and time or without delay.
- **Security:** automatic stop on low batteries; non-volatile memory.
- **Inputs connection:** Dsub9M connector.
- **Communication:** RS232 interface – D Sub 9F connector.
- **Housing:** polycarbonate 82 x 80 x 55mm.
- **Weight:** 250g (with battery).
- **Temperature:** working range -20°C to +65°C.



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