

# Counters and Hour Meters

- *Electromechanical*
- *Digital*



## Counters

CARLO GAVAZZI presents the range of Instruments dedicated to counting and measuring. Electromechanical types are suitable for applications where high reliability, durability and economy are required. The Digital types are extremely versatile and offer the possibility of measuring and or counting at higher speed and to configure the instrument according to own specific needs.

Electromechanical can be used for pulse counting or as hour meters, the digital ones offer pulse counting, time, speed or frequency measuring. In connection to our encoders they can also be used as position indicators.



Space  
Optimization



Diagnostic  
Warning



User  
Friendly



Minimizing  
Energy Cost



Long Term  
Reliability



Long Term  
Reliability



### Universal Supply

The electromechanical types are available with a wide selection of operating voltages both DC and AC. The Digital ones can be lithium battery operated, have universal supply voltage, and some others need to be chosen with DC or AC input, according to the requirements.

### Presets

Electromechanical devices have no presets. On most of digital devices one or more presets can be programmed in order to be able to provide external indication of the reached value and to stop or reset the cycle.

### Outputs

Preset instruments are equipped with one or more relays or optocoupler outputs. The output signal can transform the instrument into an actuator if used to manage external controllers such as for instance PLC's

### LCD display with LED look

DMF61 and DMF62 are available with the LED look LCD display. They combine the low power consumption of the LCD displays together with the good visibility of LED ones.

### Accessories

All instruments are designed to be installed in different panel cut outs. They are delivered with different adapters or they are provided as accessories.

### Approvals and Warranty

All devices are CE and 2002/95EC (RoHS) compliant. Some, please refer to detailed instruments description, are also cURus approved.



## Market Applications

### Counting Pieces

Counting the pieces in a production process means planning maintenance after a certain production, verifying the overall production, and testing the production capability of the system, in order to monitor production costs. As soon as the proper sensor is identified to correctly detect the material. Many are the models, digital or electromechanical, that can perform this task, with or without preset.



### Working Time for Maintenance

A lot of machines like pumps, compressors, lifts or escalators work erratically and need maintenance (i.e.: just lubrication) after a certain working time. With an hour meter or a combined instrument the maintenance personnel just have to check if the maintenance time has been reached (in this case they do maintenance and reset time) or the step has to be skipped.



### Counting People

Stations, supermarkets, and so on, need to count people going in and out. In this case no output is needed, but it is important to save space and not to lose the count data in case of mains failure. A photoelectric sensor can be used to trigger the counter.

### Material length Controlling or Positioning

Connecting an encoder to a shaft and its output to a counter which is designed to display encoder input can give an accurate measure of the length of the material managed by the shaft itself or the position of a certain machine. The relay output can be programmed to stop/cut the material at the predetermined length.

	ELECTROMECHANICAL						ELECTROMECH. MULTIFUNCTION	DIGITAL						DIGITAL MULTIFUNCTION								
	EMCT46	EMCT47	E2CT4	E1CT4	E1HM35	E1HM4		E2HM35	ECH4	FKA	DCT86	DCT2	FSA01	FSA02	DMF61	DMF62	FKC01	DMF861	DMF862	DMF1461	DMF1462	FMC01
PULSE COUNTER	■	■	■	■			■										■	■				
PRESET COUNTER										■				■								
HOUR METER					■	■	■					■	■				■	■	■	■	■	■
PRESET HOUR METER															■							
TIME RELAY																						■
TACHO / FREQUENCY														■	■		■	■	■	■	■	■
POSITION INDICATOR																	■	■	■	■	■	■

## Electromechanical Counter



**EMCT46**  
**ELECTROMECHANICAL MICRO COUNTER**  
Various enclosures shapes  
Panel or PCB mounting  
**6 Magnified figures**  
AC and DC supplies  
Low power consumption  
No reset  
Long life service  
IP66  
Approvals: cURus, CE, RoHS



**EMCT47**  
**ELECTROMECHANICAL MICRO COUNTER**  
Various enclosures shapes  
Panel or PCB mounting  
**7 Magnified figures**  
AC and DC supplies  
Low power consumption  
No reset  
Long life service  
IP66  
Approvals: cURus, CE, RoHS



**E2CT4**  
**ELECTROMECHANICAL COUNTER**  
Various enclosures shapes  
Panel or PCB mounting, Also available DIN 24 x 48  
**6 or 7 figures**  
AC and DC supplies  
With mechanical reset button  
Long life service  
IP41  
Approvals: CE, RoHS



**E1CT4**  
**ELECTROMECHANICAL COUNTER**  
Various enclosures shapes  
Panel or PCB mounting, also available, DIN 24 x 48  
**6 or 7 figures**  
AC and DC supplies  
No reset  
Long life service  
IP41  
Approvals: CE, RoHS

## Electromechanical Counter/Hour Meter



**ECH4**  
**ELECTROMECHANICAL DOUBLE FUNCTION**  
Hour meter and pulse counter  
**2 separate indicators**  
7 or 8 magnified figures  
AC and DC versions  
Single or double input  
48 x 48 panel mounting  
Long Life service  
IP52  
Approvals: cURus, CE, RoHS

# Counters

## Electromechanical Hour Meter



**E1HM35**  
**ELECTROMECHANICAL HOUR METER**  
7digits: 99999,99h  
Tamper proof (without reset)  
AC and DC supply available  
DC version with Quartz  
High shock and impact resistance  
IP65 (front side)  
DIN mounting  
(2 modules wide)  
Approvals CE, RoHS



**E2HM35**  
**ELECTROMECHANICAL HOUR METER**  
Suitable for vehicles  
6digits: (99999,9h)  
Magnified figures  
Tamper proof (without reset)  
AC and DC supply available  
Quartz Driven: 0,02% accuracy  
High shock and impact resistance  
IP 65  
Approvals CE, RoHS



**E1HM4**  
**MICRO ELECTROMECHANICAL HOUR METER**  
Various enclosure shapes  
Also available DIN 24 x 48  
7 figures AC (99999.99h)  
8 figures DC (999999.99h)  
Magnified figures  
No reset  
AC and DC supply available  
IP65  
Approvals: cURus, CE, RoHS



**E2HM4**  
**ELECTROMECHANICAL HOUR METER**  
48 x 48 panel mounting  
DIN Rail adapter available  
7 figures AC (99999.99h)  
8 figures DC (999999.99h)  
Magnified figures  
No reset  
AC and DC supply available  
IP52 (IP65 optional)  
Approvals: cURus, CE, RoHS

## Digital Counter



**DCT86**  
**PULSE COUNTER**  
Single Channel adding: <60Khz can be dumped to 30Hz NPN or PNP  
**Programmable decimal point:** Decimal point can be programmed from 0.0 to 0.000.  
**DIN 24 x 48**  
**LED display:** Very bright red LED display  
**Fast start up:** After 16ms device starts counting  
**Big keys:** big rubber keys can be operated also with gloves  
**Reset function:** mechanical, electrical, protected by lock  
**10 - 30VDC supply**  
IP65  
**Temperature Range:** -10...+50°C  
Approvals: cURus, CE, RoHS



**DCT2**  
**PRESET PULSE COUNTER**  
Single channel up / down  
**programmable decimal point:** Decimal point can be programmed from 0,0 to 0,000  
**6 Presets**  
**DIN 48 x 48**  
**2 lines LCD display**  
**Output relay**  
**Universal Input:** 12 to 250Vac/dc  
**Configurable NO or NC**  
**Reset and keypad lock inputs**  
**Battery operated:** Long life lithium battery 8years guaranteed operation  
IP65  
**Temperature Range:** -10...+50°C  
Approvals: cURus, CE, RoHS



**FKA**  
**PULSE COUNTER**  
Single channel up / down:  
Selectable by input Fast or slow counting 7 or 12Khz Fast or 30Hz Slow  
**DIN 24 X 48**  
**Single line LCD Display**  
8 digits from -9999999 to 99999999  
**Optional Backlighting**  
**DC or AC input models**  
**Front key lock**  
**Battery operated:** Long life lithium battery 8years guaranteed operation  
IP65  
**Temperature Range:** -10...+60°C  
Approvals: cURus, CE, RoHS

## Digital Multifunction



### DMF861

**Multifunction display:** Pulse counter, position display, frequency, timer  
**6Digits 8mm LED display:** 4 different counting modes  
**2 inputs:** A and B channels  
**High Rate Accuracy system:** Up to 60kHz  
**EEPROM data backup**  
**DIN 24 x 48**  
**DC supply:** With reverse polarity protection  
**IP65**  
**Robust design housing**  
**Approvals:** cURus, CE, RoHS



### DMF862

**Multifunction display with Dual reading**  
**Pulse counter, position display, frequency, timer**  
**2 values are displayed simultaneously**  
**6Digits 8mm LED display:** 4 different counting modes  
**2 inputs:** A and B channels  
**High Rate Accuracy system:** Up to 60kHz  
**EEPROM data backup**  
**DIN 24 x 48**  
**DC supply:** With reverse polarity protection  
**IP65**  
**Robust design housing**  
**Approvals:** cURus, CE, RoHS



### DMF1461

**Multifunction display:** Pulse counter, position display, frequency, timer  
**6Digits 8mm LED display:** 4 different counting modes  
**2 inputs:** A and B channels  
**High Rate Accuracy system:** Up to 60kHz  
**EEPROM data backup**  
**DIN 48 x 96**  
**DC supply:** With reverse polarity protection  
**IP65**  
**Robust design housing**  
**Approvals:** cURus, CE, RoHS

## Digital Hour Meter



### FSA01

#### HOUR METER

**8Digits LCD display:**  
 From 00000-00 to 99999-59  
 Or 00000-00 to 99999-99  
**Accumulated time always displayed**  
**Optional backlighting**  
**0.1s synchronisation**  
**High Accuracy:** 100ppm  
**NPN or PNP available**  
**DIN 24 X 48**  
**DC or AC input models**  
**Front key lock**  
**Battery operated:** Long life lithium battery 8years guaranteed operation  
**IP65**  
**Approvals:** cURus, CE, RoHS



### FSA02

#### HOUR METER

**8 Digits LCD display:**  
 From 0000.00.00 to 9999.99.59  
 Or 0000000.0 to 9999999.9  
**Accumulated time always displayed**  
**Optional backlighting**  
**0.1s synchronisation**  
**High Accuracy:** 100ppm  
**NPN or PNP available**  
**DIN 24 X 48**  
**DC or AC input models**  
**Front key lock**  
**Battery operated:** Long life lithium battery 8years guaranteed operation  
**IP65**  
**Approvals:** cURus, CE, RoHS

## Digital Timer



### FMC01

#### TIME RELAY

**8 Programmable functions:**  
 ON delay, OFF delay, One shot and Single shot.  
**9 programmable ranges:**  
 From 0.2s to 99 999h  
**6 front selection keys**  
**2 lines LCD display**  
**DIN 48 x 48**  
**Output relay:** Configurable NO or NC  
**Start and reset Inputs:**  
 Universal voltage input  
**Front key lock**  
**Battery operated:** Long life lithium battery 8years guaranteed operation  
**IP65**  
**Approvals:** CE, RoHS



**DMF 1462**  
**Multifunction display with Dual reading**  
 Pulse counter, position display, frequency, timer  
**2 values are displayed simultaneously**  
**6Digits 8mm LED display:** 4 different counting modes  
**2 inputs:** A and B channels  
**High Rate Accuracy system:** Up to 60kHz  
**EEPROM data backup**  
**DIN 48 x 96**  
**DC supply:** With reverse polarity protection  
**IP65**  
**Robust design housing Approvals:** cURus, CE, RoHS



**FKC01**  
**Multifunction preset counter**  
 Counter, tachometer and timer  
 Max counting Frequency 30kHz  
**2 channels counting input**  
**1 preset value**  
**Multi Purpose Input**  
**2 lines x 6 digits LCD display**  
**1 Relay output**  
**AC or DC supply**  
**EEPROM data retention**  
**DIN 48 x 48**  
**IP65**  
**Approvals:** cURus, CE, RoHS



**DMF61**  
**Multifunction preset counter**  
 Counter, tachometer and timer  
 Max counting Frequency 60kHz  
**1 preset value**  
**Multi Purpose Input**  
**2 lines LCD display,** also available LED look, optional backlighting  
**2 Relay outputs**  
**AC or DC supply**  
**EEPROM data retention**  
**DIN 48 x 48**  
**IP65**  
**Approvals:** cURus, CE, RoHS



**DMF62**  
**Multifunction preset counter**  
 Counter, tachometer and timer  
 Max counting Frequency 60kHz  
**2 preset value**  
**Multi Purpose Input**  
**2 lines LCD display,** also available LED look, optional backlighting  
**2 Relay outputs or optocouplers**  
**AC or DC supply**  
**EEPROM data retention**  
**DIN 48 x 48**  
**IP65**  
**Approvals:** cURus, CE, RoHS

## OUR SALES NETWORK IN EUROPE

**AUSTRIA** - Carlo Gavazzi GmbH  
Ketzergasse 374, A-1230 Wien  
Tel: +43 1 888 4112  
Fax: +43 1 889 10 53  
office@carlogavazzi.at

**BELGIUM** - Carlo Gavazzi NV/SA  
Schaarboeklei 213/3, B-1800 Vilvoorde  
Tel: +32 2 257 4120  
Fax: +32 2 257 41 25  
sales@carlogavazzi.be

**DENMARK** - Carlo Gavazzi Handel A/S  
Over Hadstenvej 38, DK-8370 Hadsten  
Tel: +45 89 60 6100  
Fax: +45 86 98 15 30  
handel@gavazzi.dk

**FINLAND** - Carlo Gavazzi OY AB  
Petaksentie 2-4, FI-00661 Helsinki  
Tel: +358 9 756 2000  
Fax: +358 9 756 20010  
myynti@carlogavazzi.fi

**FRANCE** - Carlo Gavazzi Sarl  
Zac de Paris Nord II, 69, rue de la Belle  
Etoile, F-95956 Roissy CDG Cedex  
Tel: +33 1 49 38 98 60  
Fax: +33 1 48 63 27 43  
french.team@carlogavazzi.fr

**GERMANY** - Carlo Gavazzi GmbH  
Rudolf-Diesel-Strasse 23,  
D-64331 Weiterstadt  
Tel: +49 6151 81000  
Fax: +49 6151 81 00 40  
kontakt@gavazzi.de

**GREAT BRITAIN** - Carlo Gavazzi UK Ltd  
7 Springlakes Industrial Estate,  
Deadbrook Lane, Hants GU12 4UH,  
GB-Aldershot  
Tel: +44 1 252 339600  
Fax: +44 1 252 326 799  
sales@carlogavazzi.co.uk

**ITALY** - Carlo Gavazzi SpA  
Via Milano 13, I-20020 Lainate  
Tel: +39 02 931 761  
Fax: +39 02 931 763 01  
info@gavazziacbu.it

**NETHERLANDS** - Carlo Gavazzi BV  
Wijkmeerweg 23,  
NL-1948 NT Beverwijk  
Tel: +31 251 22 9345  
Fax: +31 251 22 60 55  
info@carlogavazzi.nl

**NORWAY** - Carlo Gavazzi AS  
Melkeveien 13, N-3919 Porsgrunn  
Tel: +47 35 93 0800  
Fax: +47 35 93 08 01  
gavazzi@carlogavazzi.no

**PORTUGAL** - Carlo Gavazzi Lda  
Rua dos Jerónimos 38-B,  
P-1400-212 Lisboa  
Tel: +351 21 361 7060  
Fax: +351 21 362 13 73  
carlogavazzi@carlogavazzi.pt

**SPAIN** - Carlo Gavazzi SA  
Avda. Iparraguirre, 80-82,  
E-48940 Leioa (Bizkaia)  
Tel: +34 94 480 4037  
Fax: +34 94 480 10 61  
gavazzi@gavazzi.es

**SWEDEN** - Carlo Gavazzi AB  
V:a Kyrkogatan 1,  
S-652 24 Karlstad  
Tel: +46 54 85 1125  
Fax: +46 54 85 11 77  
gavazzi@carlogavazzi.se

**SWITZERLAND** - Carlo Gavazzi AG  
Verkauf Schweiz/Vente Suisse  
Sumpfstrasse 32,  
CH-632 Steinhausen  
Tel: +41 41 747 4535  
Fax: +41 41 740 45 40  
verkauf\_vente@carlogavazzi.ch

## OUR SALES NETWORK IN NORTH AMERICA

**USA** - Carlo Gavazzi Inc.  
750 Hastings Lane,  
USA-Buffalo Grove, IL 60089,  
Tel: +1 847 465 6100  
Fax: +1 847 465 7373  
sales@carlogavazzi.com

**CANADA** - Carlo Gavazzi Inc.  
2660 Meadowvale Boulevard,  
CDN-Mississauga Ontario L5N 6M6,  
Tel: +1 905 542 0979  
Fax: +1 905 542 22 48  
gavazzi@carlogavazzi.com

**CANADA** - Carlo Gavazzi LTEE  
3777 Boulevard du Tricentenaire  
Montreal, Quebec H1B 5W3  
Tel: +1 514 644 2544  
Fax: +1 514 644 2808  
gavazzi@carlogavazzi.com

## OUR SALES NETWORK IN ASIA AND PACIFIC

**SINGAPORE** - Carlo Gavazzi Automation  
Singapore Pte. Ltd.  
61 Tai Seng Avenue #05-06  
UE Print Media Hub  
Singapore 534167  
Tel: +65 67 466 990  
Fax: +65 67 461 980

**MALAYSIA** - Carlo Gavazzi Automation  
(M) SDN. BHD.  
D12-06-G, Block D12,  
Pusat Perdagangan Dana 1,  
Jalan PJU 1A/46, 47301 Petaling Jaya,  
Selangor, Malaysia.  
Tel: +60 3 7842 7299  
Fax: +60 3 7842 7399

**CHINA** - Carlo Gavazzi Automation  
[China] Co. Ltd.  
Rm. 2308 - 2310, 23/F.,  
News Building, Block 1,  
1002 Shennan Zhong Road,  
Shenzhen, China  
Tel: +86 755 83699500  
Fax: +86 755 83699300

**HONG KONG** - Carlo Gavazzi  
Automation Hong Kong Ltd.  
Unit 3 12/F Crown Industrial Bldg.,  
106 How Ming St., Kowloon,  
Hong Kong  
Tel: +852 23041228  
Fax: +852 23443689

## OUR PRODUCTION SITES

Carlo Gavazzi Industri A/S  
Hadsten - **DENMARK**

Carlo Gavazzi Ltd  
Zejtun - **MALTA**

Carlo Gavazzi Controls SpA  
Belluno - **ITALY**

Uab Carlo Gavazzi Industri Kaunas  
Kaunas - **LITHUANIA**

Carlo Gavazzi Automation  
(Kunshan) Co., Ltd.  
Kunshan - **CHINA**

## HEADQUARTERS

Carlo Gavazzi Automation SpA  
Via Milano, 13 - I-20020  
Lainate (MI) - **ITALY**  
Tel: +39 02 931 761  
info@gavazzi-automation.com

**CARLO GAVAZZI**  
Automation Components

Further information on  
[www.gavazziautomation.com](http://www.gavazziautomation.com) - [www.carlogavazzi.com](http://www.carlogavazzi.com)

