Variable Preset Counter signo 723.1

- Large, 6-digit, 14 mm high LED display
- Up/down counter with prescaler
- 2 presets, one programmable as trailing preset
- Easy direct selection by 2 function keys
- 2 relay outputs with change-over contacts
- Keypad can be secured against unauthorized access
- npn/pnp-programming of inputs
- RS 232 / RS 485 interface optional

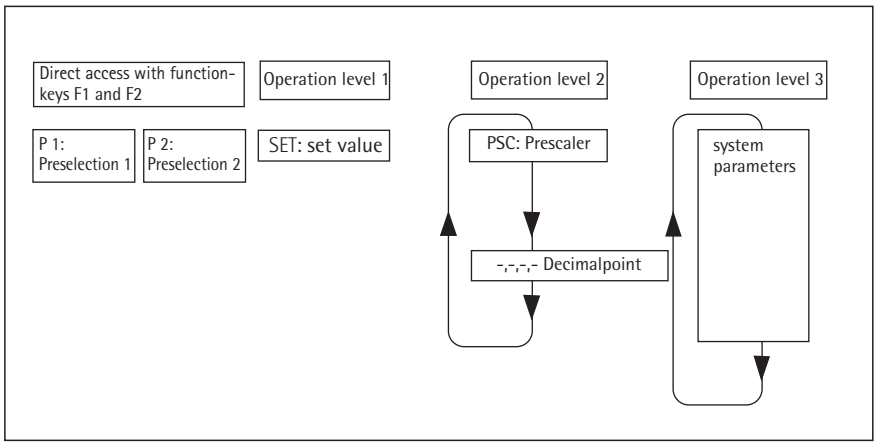
DISPLAY

6-digit LED display with 14 mm high figures, easy to read, decimal point can be programmed.

Section A Shows the actual counting position when in counting mode, and the changeable parameters when in programming mode.

Section B: LED indicators showing the active output signal, and in programming mode indicating the changeable parameter.

PROGRAMMING



Programming of signo 723.1 is divided into 3 operation levels and direct access.

Direct access: Preselection 1 and 2 can be directly selected by the function keys F1 and F2

Operation level 1: Includes the set value

Operation level 2: Includes machine parameters and application specific parameters.

Operation level 3: Includes system parameters like operation modes and count modes, which mormally are programmed during start-up procedure.

Unauthorized programming of the signo 723.1 is prevented by a control input, which can lock the operation levels as well as the operation keys.

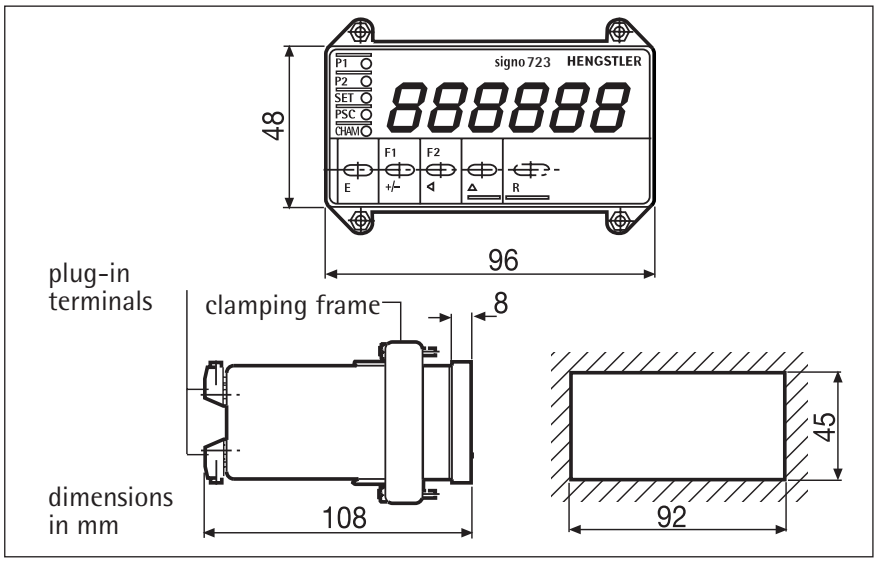
signo 723.1

Technical data

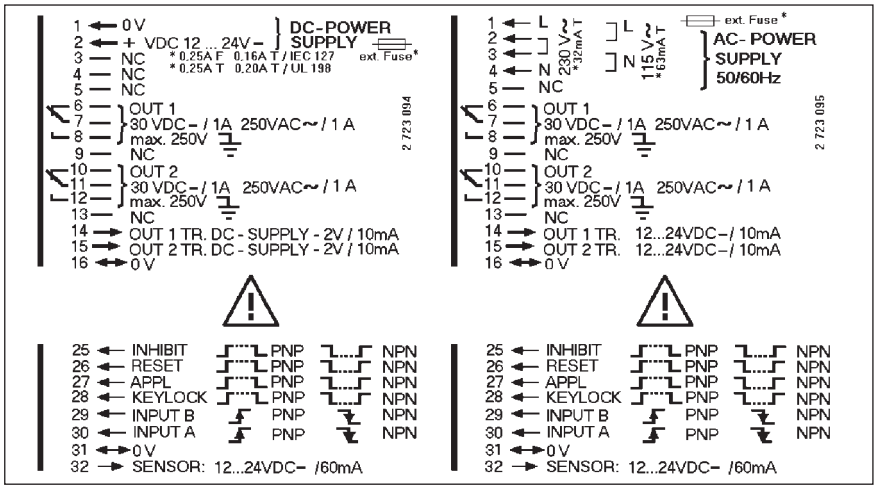
TECHNICAL DATA

Display	LED, 6 digits, suppression of leading zeros, programmable decimal point, minus sign
Digit Height	14 mm
Power Supply Voltage V_{op}	12 ... 24 VDC or 115/230 VAC depending on version
Current Consumption	12 ... 24 VDC < 250 mA, 115/230 VAC < 60 mA
Sensor Supply	AC-operation: 12 ... 24 VDC, DC-operation: V_{op} - 2 V, Imax. = 60 mA
Data Retention	non-volatile memory > 10 years
Operating Temperature	0 ... 50 °C
Storage Temperature	–20 ... +70 °C
Electrical Connection	plug-in terminals
Mounting	with clamping frame
Protection Class (IEC 144)	front side IP 54, terminals IP 20
Noise Immunity EMC	severity 3 according to IEC 801, part 2 + part 4
Vibrostability	10 m/s^2 (10... 150 Hz) according to IEC 68-part 2-6
Shock Stability	100 m/s^2 (18 ms) according to IEC 68-part 2-27
General Rating	according to VDE 0411, DIN 57411, protection class II
Inputs:	
Switching Level	<2 V and >8 V, max. 40 VDC
Active Edge	positive when pnp or negative when npn, can be switched over
Pulse Shape	any (square 1:1 at max. frequency)
Input Resistance	approx. 5 kΩ (static)
Count Input	with prescaler programmable 0.0005 ... 99.9999 – as phase discriminator input with single, double or quadruple evaluation – as differential input – as up/down input
Pulse Duration	12.5 µs (40 kHz), 17 ms (30 Hz)
Count Frequency max.	40 kHz or 30 Hz
Control Input:	
Reset	– manual by reset key – external by reset input, static or dynamic, programmable pulse duration min. 3 ms (attenuated min. 17 ms) – automatic when reaching preset 2
Gate	static, pulse duration > 12 µs / >17 ms
Hold	static, pulse duration > 3 ms
Keylock	static, pulse duration >3 ms
Outputs:	
Relay	Out 1 and Out 2
Contact Type	changeover relay
Switching Voltage	max. 250 VAC / 30 VDC , min. 5 VAC/DC
Switching Current	max. 1A, min. 10 mA
Transistor	Out 1 and Out 2, PNP, 10 mA

DIMENSIONS



CONNECTION DIAGRAM



ORDER INFORMATION

Version	Supply Voltage	Ordering code
without interface	12 ... 24 VDC	0 723 101
	115/230 VAC	0 723 102

This counter is available with several interfaces. See next pages.

signo 723
signo 727

Variable Preset Counter
and Position indicator
with Interface RS 485 / RS 232

- Large 6 digit LED display, 14 mm
- Up-/down counter, 6 digits, with different count modes and prescaler
- 2 preset values or 2 limit values
- Transistor outputs (PNP) and relay outputs (changeover contacts)
- Compact DIN 48 x 96 mm
- Easy manual operation with function keys
- Interface: RS 485 or RS 232

TECHNICAL DATA

Power Supply Voltage	12...24 VDC or 115/230 VAC
Sensor Supply	AC-operation: 12...24 VDC, DC-operation: Vop-2V, Imax. = 60 mA

Inputs:	
Switching Level	< 2 V and > 8 V, max. 40 VDC
Active Edge	positive PNP or negative NPN programmable
Count Input	with prescaler programmable 0,0005 ... 99,9999 - as phase discriminator input with single, double or quadruple evaluation - as differential input - as up/down input
Count Frequency max.	40 kHz or 30 Hz
Control Inputs	Reset, Gate, Hold and Keylock

Outputs:	
Relay	Out 1 and Out 2 with changeover contact, 1 A, 250 VAC/30 VDC
Transistor	Out 1 and Out 2 with PNP-Output, 10 mA
maximum length	15 m

RS 232

Input R x D	
typical input resistance	5 kOhm
max input voltage	30 V

Input T x D	
output voltage	8 V
output current max.	20 mA

RS 485

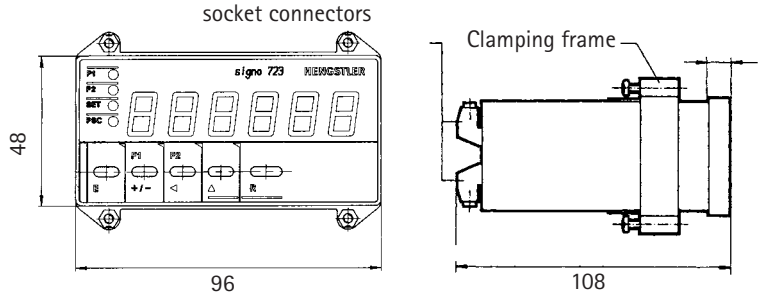
Terminals A and B	
typical input resistance	12 kOhm
max input voltage	– 7 .. + 12 V
output level	High: 3.5 V, Low: 1.3 V
output current max.	60 mA
maximum bus length	2000 m
data transfer rate	1200, 2400, 4800 Baud
data format	7 bits, even parity 8 bits, no parity

Protocol

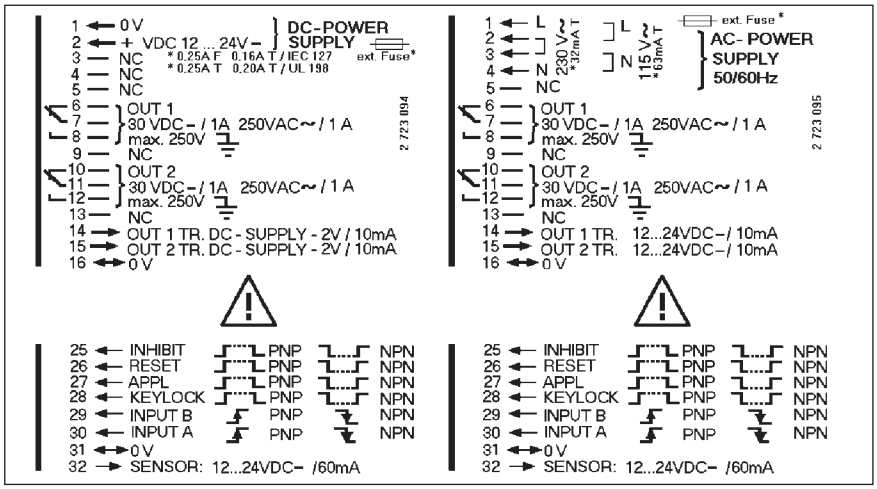
stop bits	1
protocol	Hengstler TP3 or ASCII (depending on version)

For further technical information please refer to the pages describing signo 723.1 and signo 727.1

DIMENSIONS



CONNECTION DIAGRAM



PRINTER PROTOCOL FOR 723.1

Protocol	Standard ASCII
Baudrate	1200, 2400, 4800 Baud
Data format	7 Bits, even Parity, 1 Stop bit 8 Bits, no Parity, 1 Stop bit
Line and Form Feeds programmable before and after printout	
Cutter Control programmable	

PRINT MASKS

The counter allows for the programming of 5 different print masks	
Mask 0	only Count Value
Mask 1	Counters: <value>
Mask 2	Counter: <value>
Mask 3	Counter: <value> Preset1: <value> Preset2: <value> Set: <value> Prescaler: <value>
Mask 5	Length: <value> m

signo 723
signo 727

ORDER INFORMATION

Counter

Version with interface		12...24 VDC	115/230 VAC
signo 723 Printersoftware	RS232	0 723 150M1	0 723 151M1
signo 723 TP3 Protocol	RS232	0 723 150M3	0 723 151M3
	RS485	0 723 160M3	0 723 161M3
signo 727 TP3 Protocol	RS232	0 727 150M3	0 727 151M3
	RS485	0 727 160M3	0 727 161M3

Counter with time counter

signo 723 TP3 Protocol	RS485	0 723 125	0 723 126

PC-driversoftware for TP3 Protocol

Windows 3.X	0 723 165
Windows 95 / NT	0 723 167
DOS (ab 3.2) vt3com.exe	0 723 166
TP3.com	0 723 168

RTC Converter RS 485 / RS 232

RTC	0 723 169
Plug-in power supply for RTC	3 560 032
Connection cable RTC-PC (RS 232), 5 m	1 723 055

Technical data

RTC

Remote Terminal Converter

The RTC is needed if more than one counter is to be connected to the PC or if the distance between the machine and the PC is longer than 15 m.

- up to 31 counters can be connected to the RTC via RS 485 bus
- Connection RTC - PC is a standard RS 232
- optimally tuned for operation with the Hengstler Software HTS (Hengstler Terminal Server)
- Power supply 12..24 VDC or 12..18 VAC, max. 2 VA (plug-in power supply available as accessory)

DIMENSIONS

width 115 mm / height 38 mm / depth 165 mm

CONNECTION DIAGRAMS

Connector ST 1

pin	signal
1	AC/DC
2	Earth
3	AC/DC

Connector ST 2

pin	signal	description
1	DCD	Carrier Detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicator

Connector ST 3

pin	signal
1.3	RS 485 A +
2.4	RS 485 B -
5	Earth

Windows Software signo 723
HTS for Counters signo 727

- Guided Setup
- A program group and start icon are created automatically
- Setup registers the OLE attributes of HTS in the Windows registry
- DDE- and OLE Server

EXAMPLE

Reading and writing a counter from within MS Excel:

```
' Logical counter adress
Const CounterAddress = 25
' registers of a counter
Const CounterValue = 0
Const Preset1 = 1
Const Preset2 = 2
Const Chain = 3
```

```
' read counter and insert result in table 1
Sub Read_Counter()
   Set Hts = GetObject(Class:="Hengstler.TerminalServer.10")
   Result = Hts.ReadRegister(CounterAddress; CounterValue)
   Sheets(„Table1").Cells(6; 2).Value= Result
Ende Sub

Sub Write_Counter()
   Data = Sheets(„Table1").Cells(2; 2).Value
   Set Hts = HoleObject(Class:="Hengstler.TerminalServer.10")
   Result = Hts.WriteRegister(CounterAddress; CounterValue; Data)
Ende Sub
```

Connection to DOS Hengstler Terminal
Driver vt3com.exe

The driver can be called in several ways:
- Command line (DOS prompt)
- within a batch file
- from within an application, e.g. via system() function call
- Automatic handling of several counter registers by means of a job file.

EXAMPLE

Example of a driver call (uploading preset value 2):
literal value: *vt3com.exe 25 dw l002 #89462*
value out of a file:*vt3com.exe 25 dw l002 value.dat*

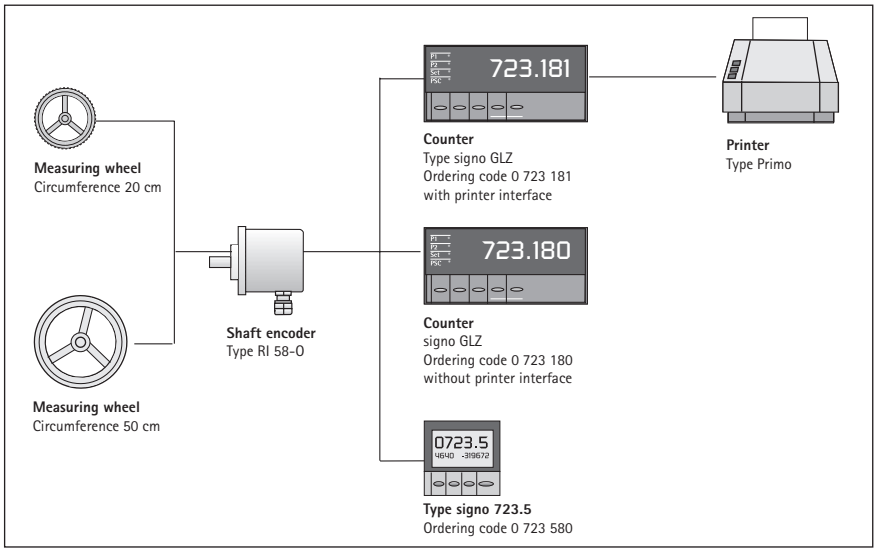
signo GLZ

Variable Preset Counter with PTB-Approval
Versions with Programmable Prescaler

- large, 6-digit, 14mm high LED display
- up/down counter with programmable resolution (dm, cm or mm)
- 2 preselections of which one is programmable as trailing signal
- easy direct selection by 2 lockable function keys
- two relay outputs with change-over contacts
- keypad can be secured against unauthorized access
- also available with printer interface
- For measuring belt systems versions with programmable prescaler

COMPONENTS FOR THIS LENGTH MEASURING SYSTEM

see also under "PTB approved measuring systems"



TECHNICAL DATA

Count input	– Phase discriminator with single evaluation, impulse resolution in mm, cm, dm (Standard) Prescaler (only-P version) 0.0005...99.9999
Length Resolution	programmable in dm, cm or mm by adjusting the decimal point (Standard version) or programmable with prescaler
Pulse Duration	min. 12.5 µs
Count Frequency	max. 40 kHz

Control Inputs:	
Reset	– manual by reset key – external, static or dynamic, programmable – pulse duration: >3 ms or >17 ms
Gate	static, pulse duration >12 µs >17 ms
Display Hold	static, pulse duration >3 ms
Keylock	static, pulse duration >3 ms

All other data are according to signo 723.1

ORDER INFORMATION

Type Standard	Supply Voltage	Ordering Code
signo GLZ	115/230 V AC	0 723 180
signo GLZ with RS 232 interface	115230 V AC	0 723 181

Type with Prescaler	Supply Voltage	Ordering Code
signo GLZ-P	115/230 V AC	0 723 182
signo GLZ-P with RS 232	115/230 V AC	0 723 183

Flexible Counter Series, Dual tico 735

Colour Display in DIN size 48 x 96 mm

COUNTING - MEASURING - INDICATING - MONITORING - TRANSMITTING

Because of the unlimited number of measurements it can handle, the **tico 735** device family is equally well suited to applications in the world of impulse and time counting as to those in the processing area.

If you are looking for display clarity and high levels of accuracy, then the **tico 735** is the right choice for you. The dual-colour display is unique, highlighting an alarm situation or an excess value at a single glance. You can programs your own choice of display colour to indicate normal or alarm conditions.

FEATURES

- Brilliant 18.5 mm high dual-colour red/green LED display with programmable colour settings
- As standard, all models have limit or preset values
- Scaling available as standard
- Universal Power Supply 90...264 V AC or 20...50 V AC/DC
- Simple structured operation with switchable help function

- External Program Lockout
- DIN housing 48 x 96 mm, mounting depth < 100 mm
- Conveniently sized Screw Terminals
- Large keys offer safety and ease of operation

- NPN and Relay Outputs
- Option: RS 485 ASCII protocol serial interface for all versions. "Remote Display" version receives process values over RS 485

PRESET COUNTER (1 Preset, 2 Presets)

Input Modes, Features	Value Range
A+B, A-B, Direction, Quad	0...99999
1 or 2 Presets (P 1 as absolute Preset or Prewarn)	0...99999
Up/down with or without auto reset mode	0 -> P 2, P 2 -> 0
Out 1 and Out 2 separetely programmable	latch or 0.01...99.99 Sec

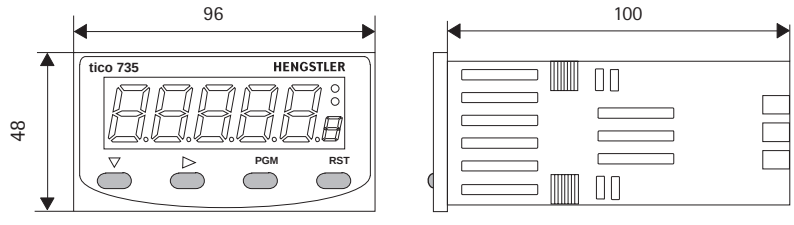
BATCH COUNTER

A+B, A-B, Direction, Quad	0...99999
Up/down with or without auto reset mode	0 -> P 1, P 1 -> 0
Preset, Batch Preset, Totalizer	0...99999
Out 1 and Out 2 separately programmable	latch or 0.01...99.99 Sec

tico 735

Technical data

DIMENSIONS



Dimensions in mm

DISPLAY AND KEYBOARD

Primary Display	Red/Green, 7 segment LED, 5 digits, height 18.5 mm
Secondary Display	single digit 7 segment LED, height 7 mm, red/green
Output Indicators	2 red LEDs for OUT 1 and OUT 2 status
Keyboard	4 rubber keys for programming and manual reset

PHYSICAL

Front Dimensions	DIN 48 mm x 96 mm, 110 mm total depth
Mounting	Front panel mounting (mounting bracket supplied)
Panel Cutout	45 mm x 92 mm, panel thickness max 12 mm
Construction	Front carrier with PCBs can be pulled out
Terminals	Screw Type (combination head)

OPERATING CONDITIONS

Power Supply	90 - 264 V AC 50/60 Hz (electrically separated from all inputs and outputs) or 20...50 V AC / 22...55 V DC
Temperature	Operation: 0 °C to +55 °C (32 °F to 131 °F) Storage: -20 °C to +60 °C (-4 °F to 176 °F)
Relative Humidity	0 to 90 %, non-condensing

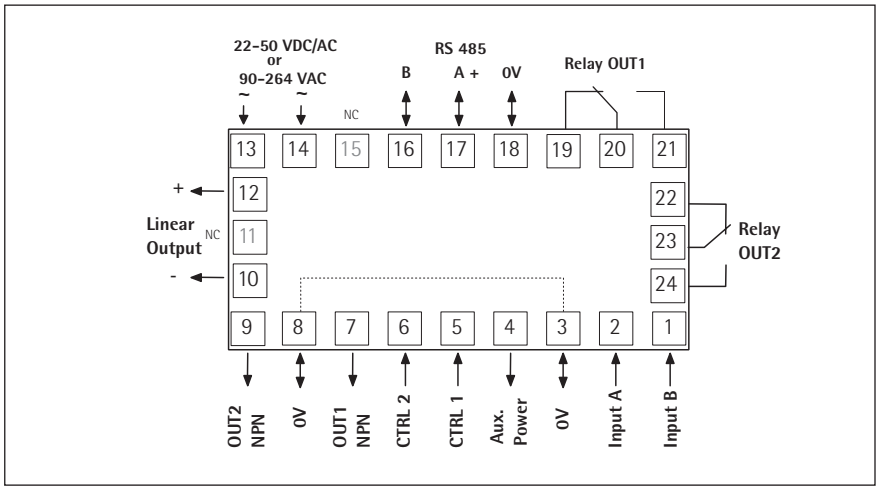
APPROVALS

Protection	Frontpanel IP 66
CE	EN 50082-1/92-95; EN 50081-1/92, -2/94
Safety	DIN EN 61010 part 1; protection according to class II
General	UL, CUL, Overvoltage cat. II, Contamination level 2

OPTION: RS 485

Type	RS 485, serial asynchronous, Open ASCII, Master-Slave, up to 99 zones
Parameters	9600...1200 Bd, 1 start, 7 data, 1 stop, even parity

TERMINALS



COUNT INPUTS

Active Edge	NPN or PNP programmable; capable of TTL; 30 V DC max
with PNP	High ≥ 3.0 V, Low < 2.0 V or open; 10 kOhm to 0 V
with NPN	High ≥ 3.0 V or open, Low < 2.0 V; 4.7 kOhm to V+
Frequency	20 Hz, 200 Hz or 10 kHz programmable

CONTROL INPUTS

CTRL1 (Reset or hold)	NPN; High ≥ 3.0 V or open, Low < 2.0 V; 4,7 kOhm to V+ edge sensitive; 25 ms min., max 30 V DC
CTRL 2 (Progr. security))	NPN; High ≥ 3.0 V or open, Low < 2.0 V; 4,7 kOhm to V+ level sensitive; 25 ms min.; max 30 V DC

OUTPUTS

OUT 1 NPN OUT 2 NPN	NPN, open collector; 30 V DC max; 100 mA max response time < 75 µs
Relay 1, Relays 2 (opt.)	Changeover (Form C); 240 V AC / 3A or 110 V AC / 5 A; pull-in time 8 ms
Auxiliary Power Supply	9...15 (unregulated V DC), 125 mA max; residual ripple < 0.5 V

SPECIAL FEATURES

- Display colour programmable
- Count Calibrator 0.0001 to 9.9999 as standard
- Preset Lockout and Reset Disable programmable
- Program Security via CTRL 2

ORDERING DATA

Output Relay 2
0 none
1 with Relay 2
not for function
1, 6, 7

Interfaces
0 none
5 with RS 485

Type 0735 P

0	7	3	5	P					

Function
1 Totalizer
2 Position Indicator
4 Tacho/Rate Meter
5 Rate + Totalizer
6 Time Counter
7 1 Preset Counter
8 2 Preset Counter
9 Batch Counter

Linear Output
0 none
3 with 4-20 mA
(only with function
2, 4, 5)

Power Supply
0 90...264 V AC
2 20...50 V AC or
22...55 V DC

Option module	Ordering code
Relay	1 901 001
RS 485 interface	1 901 004