

signo 727.1



APPLICATION FIELDS

DISPLAY

PROGRAMMING

Position Indicator with/without Limit Values

- Large, 6-digit, 14 mm high LED display
- Prescaler
- 2 variable limit values
- Easy direct selection by 2 function keys
- Relay output with two change-over contacts
- Connection by plug-in screw terminals
- Chain value or absolute value indication
- Small compact design in DIN dimensions 48 x 96 mm
- Electronic value retention, non polluting – no battery
- NPN/PNP programming of inputs
- Optional with RS 232/RS 485 interface

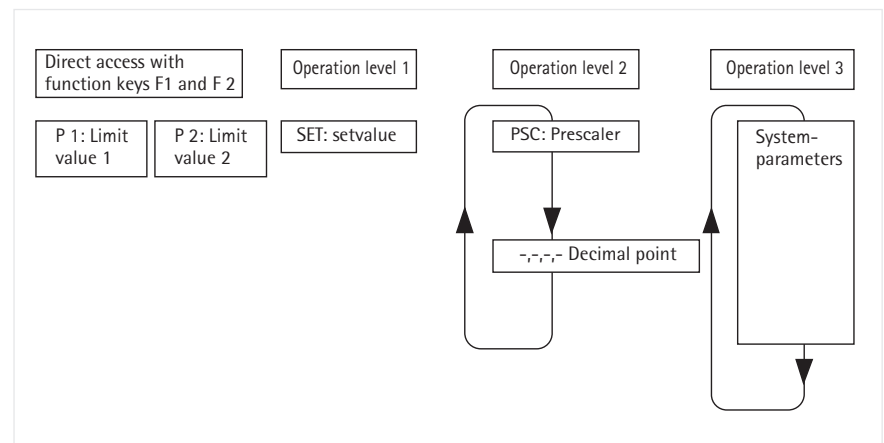
Indication of infeed values, lengths, support- or machine positions, totalizing values etc. The coupling to the machine may be effected e. g. with an incremental shaft encoder from the wide and comprehensive Hengstler program of types RI 30 to RI 58.

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



Section A: shows the actual count value 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 of signo 727 is possible by direct access and in the 3 operation levels.

Direct access: Limit value 1, Limit value 2 are set with the function keys F1, F2

Operation level 1: Set value

Operation level 2: Includes prescaler and decimal point

Operation level 3: Includes system parameters, which are normally programmed during start-up procedure only.

Unauthorized programming of the signo 727 is prevented by a control input, which can lock the operation levels.

Technical data

signo 727.1

TECHNICAL DATA

Display	7-segment LED, 6 digits, suppression of leading zeros, programmable decimal point
Digit Height	14 mm
Power Supply Voltage U_b	12 ... 24 VDC or 115/230 VAC, depending on versions
Current Consumption	12 ... 24 VDC < 250 mA, 115/230 VAC < 60 mA
Sensor Supply	AC operation: 12 ... 24 VDC, DC operation: $U_b - 2 V$, $I_{max.} = 60 mA$
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 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 input negative when npn input
Pulse Shape	any (square 1:1 at max. frequency)
Input Resistance	approx. 5 k Ω (static)
Count Input	with prescaler programmable 0.0005 bis 99.9999 – as phase discriminator input with single, double or quadruple evaluation – as differential input – as up/down input
Pulse Duration	12,5 μ s (40 kHz), 17 ms (30 Hz)
Count Frequency max.	40 kHz or 30 Hz

Control Input:

Application Input 1	static, pulse duration > 3 ms
Display-Hold or Reset-enable, (programmable)	
Application Input 2	(Reset functions)
Reset and/or Chain-Reset, (programmable)	pulse duration > 3 ms or > 17 ms
Gate	static, pulse duration > 12 μ s / > 17 ms
Keylock	static, pulse duration > 3 ms

Outputs:

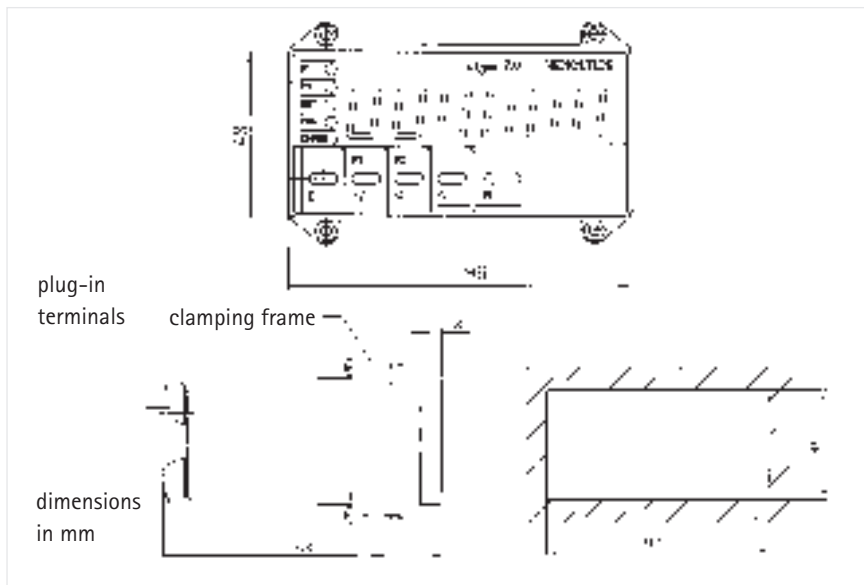
Relay*	Out 1 and Out 2
Contact Type	changeover relay
Switching Voltage	max. 250 VAC / 30 VDC, min. 5 VAC/DC
Switching Current	max. 1A, min. 10 mA
Transistor*	Out 1 and Out 2, PNP, 10 mA

* for versions with limit value only

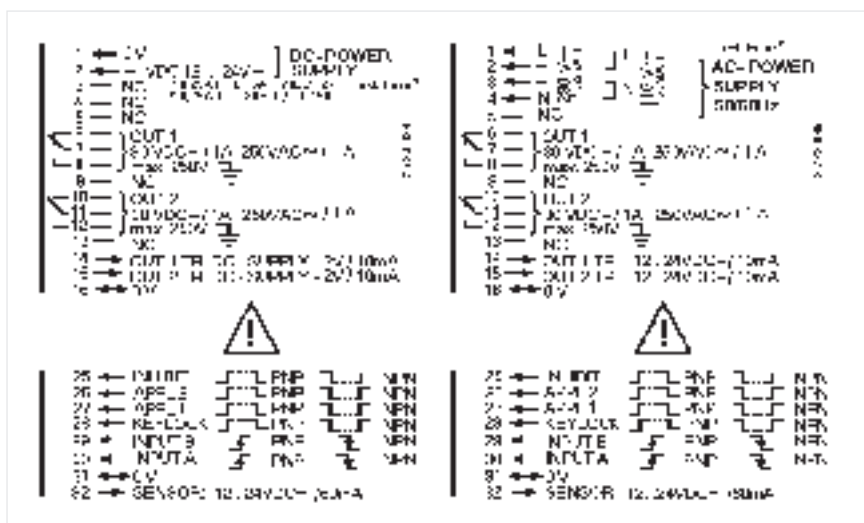
signo 727.1

Technical data

DIMENSIONAL DRAWING



CONNECTION DIAGRAM



(here with Limit values)

ORDER INFORMATION

Type	Supply	Ordering code
signo 727 without limit values	12 ... 24 VDC	0 727 101
signo 727 without limit values	115/230 VAC	0 727 102
signo 727 with 2 limit values	12 ... 24 VDC	0 727 121
signo 727 with 2 limit values	115/230 VAC	0 727 122

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

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

signo 723

signo 727



TECHNICAL DATA

- 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

Power Supply Voltage	12...24 VDC or 115/230 VAC
Sensor Supply	AC-operation: 12...24 VDC, DC-operation: Vop=2V, I _{max.} = 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

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

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
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

RS 232

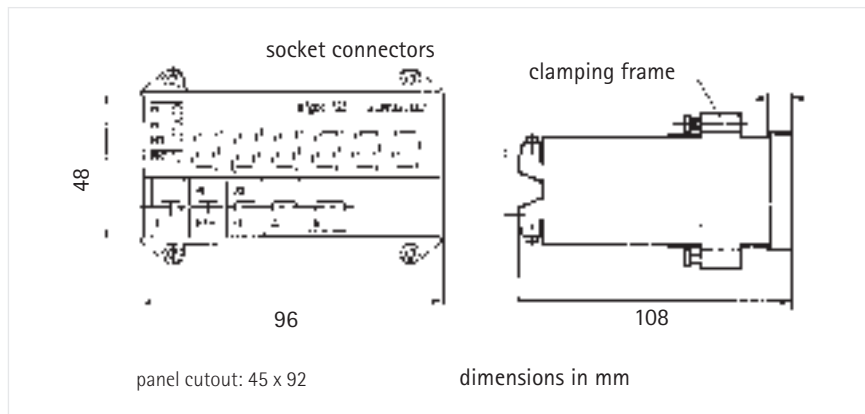
RS 485

Protocol

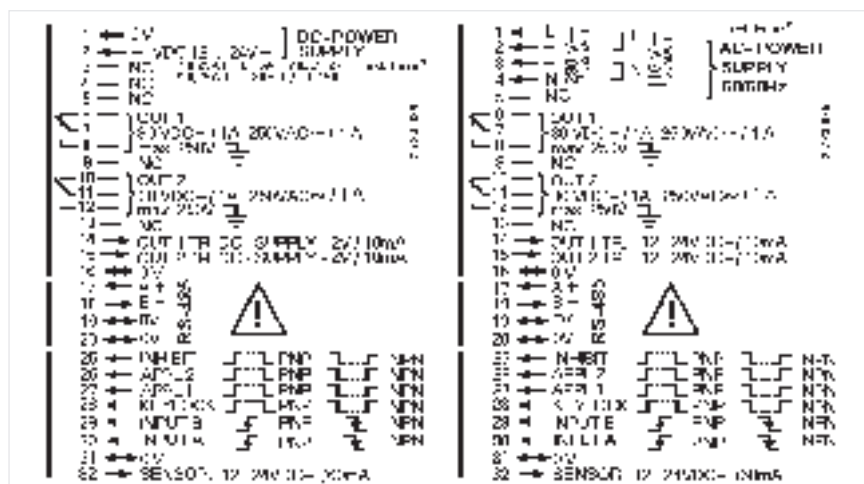
signo 723 signo 727

DIMENSIONS

Technical data



CONNECTION DIAGRAM



(here with interface RS 485)

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

Technical data

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
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PC-driversoftware for TP3 Protocol

Windows 95 / NT / 2000	0 723 167
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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

RTC



DIMENSIONS

CONNECTION DIAGRAMS

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)

width 115 mm / height 38 mm / depth 165 mm

Connector ST 1

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

Connector ST 3

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

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

Position Indicators

signo 723
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EXAMPLE

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

Windows Software HTS for Counters

- 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

Reading and writing a counter from within MS Excel:

```
' 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
```

Position Indicator signo 727 SSI for Absolute Encoder Connection

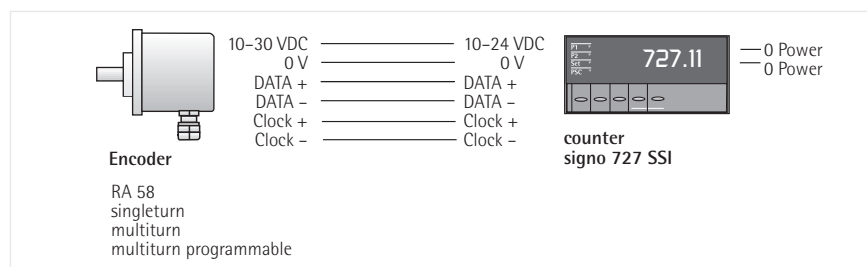


- large, 6-digit, 14 mm high LED display
- predetermined offset
- 2 variable limit values
- easy direct selection by 2 function keys
- relay outputs with change-over contacts
- chain value or absolute value indication
- npn/pnp programming of inputs
- synchronous/serial Interface

APPLICATION FIELDS

Indication of infeed values, lengths, support- or machine positions, totalizing values etc.

The coupling to the machine may be done with an absolute encoder with SSI-Interface from the wide and comprehensive Hengstler program of types RA 58.



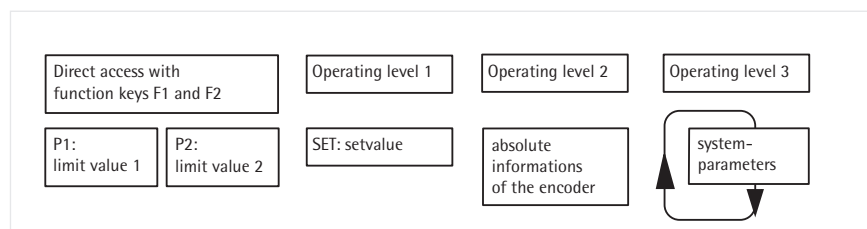
DISPLAY



Section A: shows the actual count value 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 727 is possible by direct access and in the 3 operating levels

Direct access: Limit values are set with the function keys F1, F2

Operating level 1: Set value

Operating level 2: Includes absolute informations of the encoder

Operating level 3: Includes system parameters, which are normally programmed during start-up procedure only.

Unauthorized programming of the signo 727 is prevented by a control input, which can lock the operating levels.

signo 727 SSI

TECHNICAL DATA

Technical data

Display	LED, indication value/preselection 6 digits, suppression of leading zeros, programmable decimal point, minus sign
Digit Height	14 mm
Power Supply Voltage U_b	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 $U_B - 2 V$, $I_{max} = 60 mA$
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
Vibro stability	10 m/s \approx (10...150 Hz) according to IEC 68-part 2-6
Shock Stability	100 m/s \approx (18 ms) according to IEC 68-part 2-27
General Rating	according to VDE 0411, DIN 57411, protection class II

Inputs:

SSI Data +

SSI Data -

Baud rate: ca. 100 kHz

Control Input:

Application Input 1 static

Display hold,

Reset or Chain Reset
(programmable)

Keylock static

Outputs:

SSI Clock +

SSI Clock -

Relay* Out 1 and Out 2

Contact Type changeover relay

Switching Voltage max. 250 VAC/30 VDC, mind 5 VAC/DC

Switching Current max. 1A, min. 10 mA

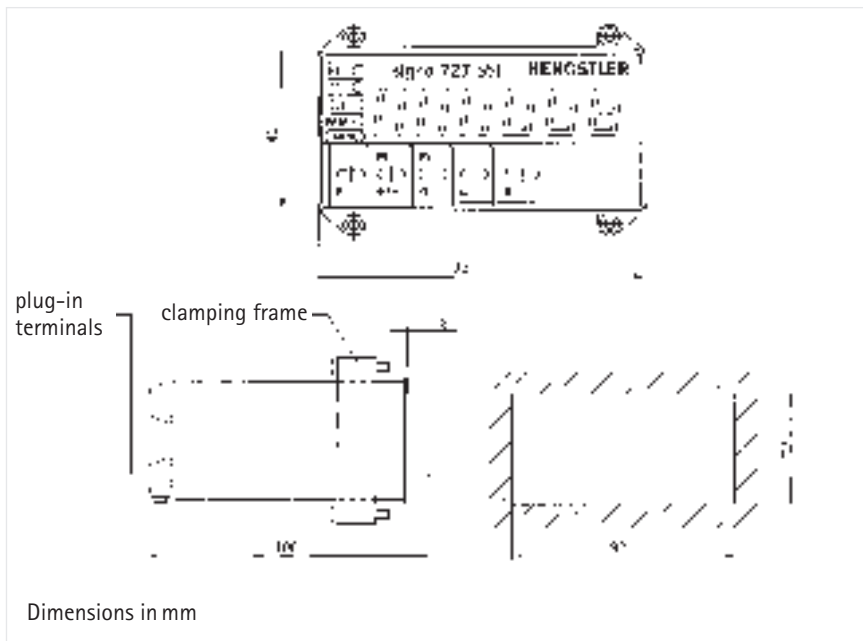
Transistor* Out 1 and Out 2, PNP, 10 mA

* for versions with limit value only

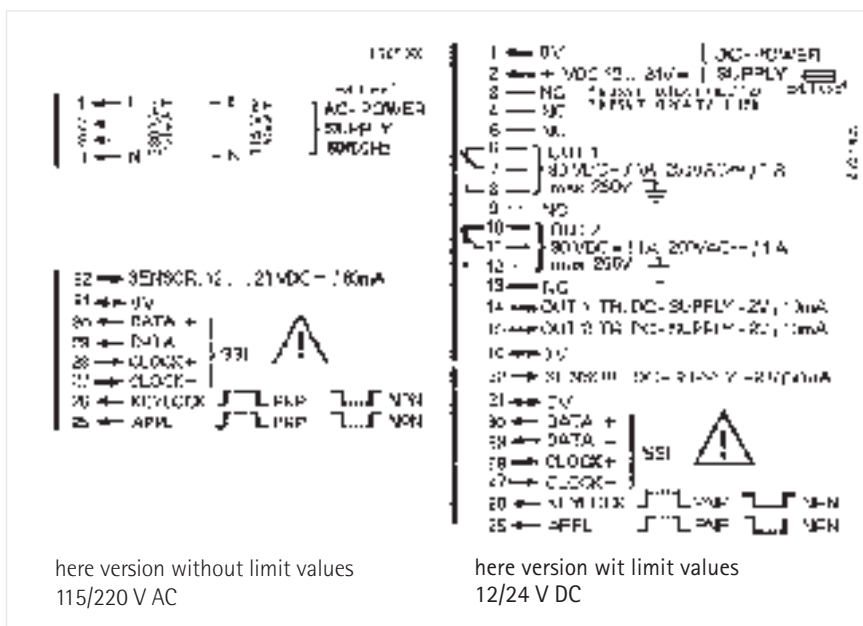
Technical data

signo 727 SSI

DIMENSIONAL DRAWING



CONNECTION DIAGRAM



ORDER INFORMATION

Type	absolute encoder connection	Power supply	Ordering code
signo 727 without limit values	SSI	12...24 VDC	0 727 111
signo 727 without limit values	SSI	115/230 VAC	0 727 112
signo 727 with 2 limit values	SSI	12...24 VDC	0 727 131
signo 727 with 2 limit values	SSI	115/230 VAC	0 727 132

Do not use absolute encoder with cut Gray Excess Code (e. g. 360 or 720)
 Maximum Encoder resolution: 12 bits (Singleturn) and
 24 bits (Multiturn 12 + 12 bits)

Position Indicators

Notes