

**SEW**  
**EURODRIVE**



Precise and fast  
positioning of the motor

**Encoder systems**

## The proper encoder system for a smoothly running system

The optimum interaction of the individual system components is particularly important in applications with positioning tasks. Motors have to accurately respond to commands from the drive electronics. The encoder systems required for this purpose detect the actual position and feed back the speed. In drives with servomotors, the rotor position angle can be determined and controlled.

However, optimum response times are only achieved if motor, encoder, inverter and the associated software are perfectly matched. This is the reason why SEW-EURODRIVE offers motor and encoder systems from one source: complete systems for fault-free operation of your system. The newly developed electronic nameplate for servo gearmotors makes for fast startup of the motors in addition to the applica-

tion modules (standardized control programs) from SEW-EURODRIVE. This means all motor data are automatically entered in the MOVITOOLS® project planning software. Based on these data, MOVITOOLS® calculates the optimum parameters of the control system to ensure that the drive inverter is perfectly matched to the connected motor! Easy and quick!

Parallel shaft helical gearmotor with  
EH1S incremental encoder



DS/CM synchronous  
servomotor



## Absolute encoder, single and multiturn

Encoder	Type	Installed to	Signal	Supply [V]
AK0H	Built-on encoder with cone shaft	- CMP40 synchronous servomotors - CMD55, 70 synchronous servomotors	1 V sine/cos Hiperface M, multiturn *1	7 ... 12
EK0H	Built-on encoder with cone shaft	- CMP40 synchronous servomotors - CMD55, 70 synchronous servomotors	1 V sine/cos Hiperface S, singleturn *1	7 ... 12
AS1H	Built-on encoder with spreadshaft	- CMP50, 63 synchronous servomotors - CMD93, 138 synchronous servomotors - DS/CM synchronous servomotors	1 V sine/cos Hiperface M, multiturn *1	7 ... 12
ES1H	Built-on encoder with spreadshaft	- CMP50, 63 synchronous servomotors - CMD93, 138 synchronous servomotors - DS/CM synchronous servomotors	1 V sine/cos Hiperface S, singleturn *1	7 ... 12
AF1H	Built-on encoder with spreadshaft, positive connection on the shaft connection	- DS/CM synchronous servomotors	1 V sine/cos Hiperface M, multiturn *1	7 ... 12
EF1H	Built-on encoder with spreadshaft, positive connection on the shaft connection	- DS/CM synchronous servomotors	1 V sine/cos Hiperface M, singleturn *1	7 ... 12
AS2H / AS3H	Built-on encoder with spreadshaft	- AC motors DT/DT - CT/CV asynchronous servomotors	1 V sine/cos Hiperface M, multiturn *1	7 ... 12
AV1H	Solid shaft encoder with coupling	- AC motors DT/DT - DS synchronous servomotors - CT/CV asynchronous servomotors	1 V sine/cos Hiperface M, multiturn *1	7 ... 12
AV1Y	Solid shaft encoder with coupling	- AC motors DT/DT - DS synchronous servomotors - CT/CV asynchronous servomotors	1 V sine/cos SSI M, multiturn	15 ... 24

\*1 = with integrated EEPROM for storing the electronic nameplate

## Incremental encoder

Encoder	Type	Installed to	Signal	Supply [V]
EH1T*	Hollow shaft	AC motors DR63	5 V TTL (RS422)	5 10 ... 30
EH1S**			1 V sine/cos	
EH1R			5 V TTL (RS422)	
EH1C			24 V HTL	
ES1T* / ES2T*	Spreadshaft	AC motors DT/DV and asynchronous servomotoren CT/CV	5 V TTL (RS422)	5 10 ... 30
ES1S** / ES2S**			1 V sine/cos	
ES1R / ES2R			5 V TTL (RS422)	
ES1C / ES2C			24 V HTL	
EV1T*	Coupling with solid shaft		5 V TTL (RS422)	5 10 ... 30
EV1S**			1 V sine/cos	
EV1R			5 V TTL (RS422)	
EV1C			24 V HTL	

\* Recommended encoder for operation with MOVITRAC® frequency inverters

\*\* Recommended encoder for operation with MOVIDRIVE® drive inverters

## Proximity sensor

Encoder	Type	Installed to	Signal	Supply [V]
NV11	Radial on fan guard	AC motors DT/DV	1 pulse / A track	10 ... <b>24</b> ...65
NV21			1 pulse / A+B tracks	
NV12			2 pulses / A track	
NV22			2 pulses / A+B tracks	
NV16			6 pulses / A track	
NV26			6 pulses / A+B tracks	

## Resolver

Resolver name	Type	Installed to	Signal	Supply [V]
RH1M	Hollow shaft	CM synchronous servomotors	2-pole resolver signals	7
RH1L		Synchronous brake servomotors		

## Linear absolute encoders

Encoder	Type	Installed to	Signal	Supply [V]
AL1H	Built-on encoder for synchronous linear motors	SL2 synchronous linear motors	1 V sine/cos Hiperface M	7 ... 12

CT asynchronous servomotor with AV1H absolute encoder



AD motor DT with NV26 proximity sensor



CM synchronous servomotor with ES1H incremental encoder



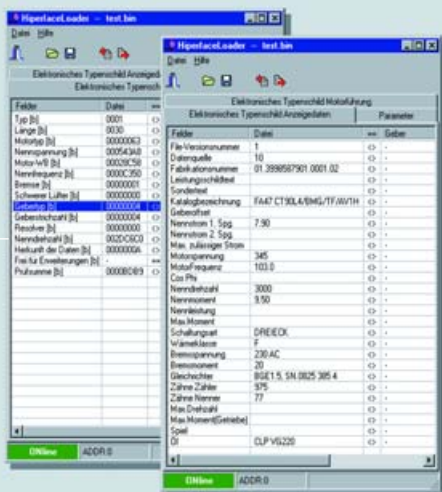


## No matter whether functional test or positioning: SEW-EURODRIVE always has the right encoder system for you

No matter whether simple proximity sensors, which provide quality-specific information about the rotary motion, TTL and sine/cos encoders or absolute encoders, SEW-EURODRIVE fulfils any specific request for individually suitable actual speed values, mechanical configuration and degree of protection of the encoder. And if you

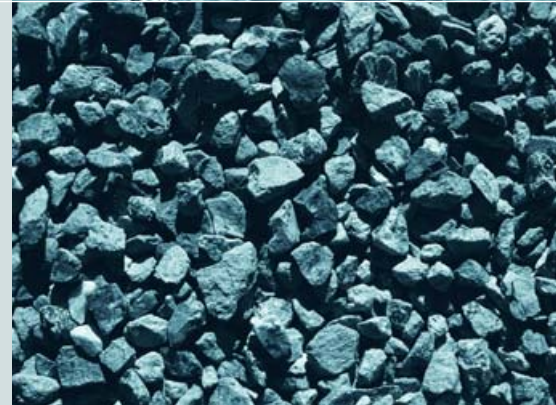
should not find a certain number of pulses, a specific code or degree of protection in the encoder system program of SEW-EURODRIVE, you will still obtain the drive completely from one source: mounting devices let you install even the most unusual speed sensors.

## Safe and simple startup with the electronic nameplate



SEW-EURODRIVE has implemented an electronic nameplate in the memory of the encoder specifically in conjunction with absolute encoders, such as AKOH or AS1H. This nameplate contains the complete data record of the drive depending on the motor. This means fault-free and quick startup in conjunction with MOVITOOLS® or MOVITOOLS® MotionStudio.

Driving the world – with innovative drive solutions for all branches of industry and for every application. Products and systems from SEW-EURODRIVE for any application – worldwide. SEW-EURODRIVE products can be found in a variety of industries, e. g. automotive, building materials, food and beverage as well as metal-processing. The decision to use drive technology “made by SEW-EURODRIVE“ stands for safety regarding functionality and investment.



## How we're driving the world

With people who think fast and develop the future with you.

With a worldwide service network that is always close at hand.

With drives and controls that automatically improve your productivity.

With comprehensive knowledge in virtually every branch of industry today.

With uncompromising quality that reduces the cost and complexity of daily operations.



**SEW-EURODRIVE**  
Driving the world

With a global presence that offers responsive and reliable solutions. Anywhere.

With innovative technology that solves tomorrow's problems today.

With online information and software updates, via the Internet, available around the clock.

## SEW-EURODRIVE is right there for you:

### Argentina

Phone +54 3327 4572-84  
Fax +54 3327 4572-21  
sewar@sew-eurodrive.com.ar

### Australia

Phone +61 3 9933-1000  
Fax +61 3 9933-1003  
enquires@sew-eurodrive.com.au

### Austria

Phone +43 1 617 55 00-0  
Fax +43 1 617 55 00-30  
sew@sew-eurodrive.at

### Belgium

Phone +32 10 231-311  
Fax +32 10 231-336  
info@sew.be

### Brazil

Phone +55 11 6489-9133  
Fax +55 11 6480-3328  
sew@sew.com.br

### Canada

Phone +1 905 791-1553  
Fax +1 905 791-2999  
l.reynolds@sew-eurodrive.ca

### Chile

Phone +56 2 75770-00  
Fax +56 2 75770-01  
ventas@sew-eurodrive.cl

### China

Phone +86 22 25322612  
Fax +86 22 25322611  
gm-tianjin@sew-eurodrive.cn

### Colombia

Phone +57 1 54750-50  
Fax +57 1 54750-44  
sewcol@sew-eurodrive.com.co

### Czech Republic

Phone +420 220121234  
Fax +420 220121237  
sew@sew-eurodrive.cz

### Denmark

Phone +45 43 9585-00  
Fax +45 43 9585-09  
sew@sew-eurodrive.dk

### Finland

Phone +358 201 589 300  
Fax +358 3 7806-211  
sew@sew.fi

### France

Phone +33 3 88 73 67 00  
Fax +33 3 88 73 66 00  
sew@usocome.com

### Great Britain

Phone +44 1924 893-855  
Fax +44 1924 893-702  
info@sew-eurodrive.co.uk

### Hong Kong

Phone +852 2 7960477  
Fax +852 2 7959129  
contact@sew-eurodrive.hk

### Hungary

Phone +36 1 437 06-58  
Fax +36 1 437 06-50  
office@sew-eurodrive.hu

### India

Phone +91 265 2831086  
Fax +91 265 2831087  
mdoffice@seweurodriveindia.com

### Italy

Phone +39 02 96 9801  
Fax +39 02 96 799781  
sewit@sew-eurodrive.it

### Japan

Phone +81 538 373811  
Fax +81 538 373814  
sewjapan@sew-eurodrive.co.jp

### Malaysia

Phone +60 7 3549409  
Fax +60 7 3541404  
sales@sew-eurodrive.com.my

### Mexico

Phone +52 442 1030-300  
Fax +52 442 1030-301  
scmexico@seweurodrive.com.mx

### Netherlands

Phone +31 10 4463-700  
Fax +31 10 4155-552  
info@vector.nu

### New Zealand

Phone +64 9 2745627  
Fax +64 9 2740165  
sales@sew-eurodrive.co.nz

### Norway

Phone +47 69 241-020  
Fax +47 69 241-040  
sew@sew-eurodrive.no

### Peru

Phone +51 1 3495280  
Fax +51 1 3493002  
sewperu@sew-eurodrive.com.pe

### Poland

Phone +48 42 67710-90  
Fax +48 42 67710-99  
sew@sew-eurodrive.pl

### Portugal

Phone +351 231 20 9670  
Fax +351 231 20 3685  
infosew@sew-eurodrive.pt

### Russia

Phone +7 812 3332522  
Fax +7 812 3332523  
sew@sew-eurodrive.ru

### Singapore

Phone +65 68621701  
Fax +65 68612827  
sewsingapore@sew-eurodrive.com

### Slovakia

Phone +421 2 49595201  
Fax +421 2 49595200  
sew@sew-eurodrive.sk

### South Africa

Phone +27 11 248-7000  
Fax +27 11 494-3104  
dross@sew.co.za

### South Korea

Phone +82 31 492-8051  
Fax +82 31 492-8056  
master@sew-korea.co.kr

### Spain

Phone +34 9 4431 84-70  
Fax +34 9 4431 84-71  
sew.spain@sew-eurodrive.es

### Sweden

Phone +46 36 3442-00  
Fax +46 36 3442-80  
info@sew-eurodrive.se

### Switzerland

Phone +41 61 41717-17  
Fax +41 61 41717-00  
info@imhof-sew.ch

### Thailand

Phone +66 38 454281  
Fax +66 38 454288  
sewthailand@sew-eurodrive.com

### Turkey

Phone +90 216 4419163  
Fax +90 216 3055867  
sew@sew-eurodrive.com.tr

### Ukraine

Phone +380 56 3703211  
Fax +380 56 3722078  
sew@sew-eurodrive.ua

### USA

Phone +1 864 439-7537  
Fax +1 864 439-0566  
cslyman@seweurodrive.com

### Venezuela

Phone +58 241 832-9804  
Fax +58 241 838-6275  
sewventas@cantv.net

**SEW**  
**EURODRIVE**

SEW-EURODRIVE GmbH & Co KG  
P.O.Box 30 23  
D-76642 Bruchsal/Germany  
Phone +49 7251 75-0  
Fax +49 7251 75-1970  
sew@sew-eurodrive.com

→ [www.sew-eurodrive.com](http://www.sew-eurodrive.com)