elap

MEM520-Bus   MEM540-Bus   MEM620-Bus

ABSOLUTE ENCODERS **MEM-BUS**
WITH **EtherNet/IP™** INTERFACE

Based on the industrial Ethernet communication protocol, **EtherNet/IP™ interface** allows a **steady, flexible and fast** communication between control systems and peripheral devices (such as sensors and actuators).
EtherNet/IP™ networks can effectively integrate multivendor multi-protocol devices to create articulated remote-controlled production systems, a pecularity which makes it one of the most widespread industrial communication protocols worldwide.

ODVA CONFORMANT

CIP Sync

c UL us

MEM-BUS EtherNet/IP™ encoders offer:

- *High resolution (29 bit)*
- *DLR (Device Level Ring)*
- *IP addressing via hardware and software*
- *Synchronous Real Time transmission*

- *Parameter entering via TCP/IP*
- *Encoder status diagnostic*
- *Position, speed and alarms comprehensive data managed by assembly object 110*

MEM-BUS EtherNet/IP® ENCODER PROFILE	SETTABLE PARAMETERS	STATE INDICATORS
• **Ref IEC61784-1** • Device profile: **CIP™ Protocol, encoder profile 22H** • Physical layer: EtherNet/IP® 100Base-TX, Fast Ethernet, ISO/IEC 8802-3 • Output code: Binary • Cycle time ≥ 1 ms • Transmission rate: 100 Mbit/s • Transmission: Cable CAT-5, shielded (STP), ISO/IEC 11801	via TCP/IP • Steps/revolution • Revolutions number • Preset • Rotation direction • Speed unit:steps/s, steps/ms, rev./min. • Position and speed alarm thresholds	4 two-color signalling LEDs ensure the state diagnostic: • LINK 1 • LINK 2 • Net • Mod

PROGRAMMING & OPERATION

Parameters are entered via software via **TCP/IP**.

Besides standard **Assembly Objects 1, 2 and 3,** the encoder support the **proprietory object 110,** allowing a comprehensive view of **parameters and alarms relating to speed and position.**

1	It provides the factorized absolute position
2	It provides the factorized absolute position + warnigs and allarms
3	It provides the factorized absolute position + 32 bit instant speed
110	It provides the factorized absolute position + 32 bit instant speed + position state record + speed and position warnings

The speed measuring unit (step/s, step/ms, RPM), selected in the starting parameter entering phase, *can be modified run-tim.*
IP addressing can be entered both by **rotary switches** and **via software (DHCP/BOOTP)**
The function **DLR Device Level Ring** ensures operation even in case of errors or net interruptions.
CIP Sync™ provides the **increased control coordination** needed for control applications where absolute time synchronization is important to achieve real-time synchronization between distributed intelligent devices and systems.

MECHANICAL VERSIONS

| MEM620-Bus	MEM520-Bus	MEM540-Bus	MEM440-Bus	MEM450-Bus
Ø 58 mm body 63,5x63,5 mm square flange Ø 31,75 mm centering mask Shaft Ø 6, 8 or 10 mm *SIZE25*	Ø 58 mm body Ø 58 mm round flange Servo coupling Ø 50 mm centeing mask Shaft Ø 6, 8 or 10 mm *SYNCHRO FLANGE*	Ø 58 mm body Ø 58 mm round flange Ø 36 mm centering mask- 3 holes M4 a 120° on Ø 48 mm Shaft Ø 6, 8 or 10 mm *CLAMPING FLANGE*	Ø 58 mm body Blind hollow shaft for motor fixing Hollow shaft Ø 8, 10, 12, 14 or 15 mm Antirotational fixing	Ø 58 mm body Blind hollow shaft for motor fixing Hollow shaft Ø 8, 10, 12, 14 or 15 mm Fixing by elastic metal support

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS

MEM-Bus	620/520/540	440/450
• Materials: housing shaft	Aluminium Stainless steel	
• Weight	500 g ca.	
• Shaft Ø / Hole Ø	6, 8 ,10 mm	6, 8 ,10 mm
• Revolutions/minute	6000	
• Starting torque	≤0.8 Ncm	
• Intertia	≤25 g cm^2	
• Max load	80 N axial/100 N radial	
• Vibrations resistance (10÷2000 Hz)	100 m/sec^2	
• Shock (11 ms)	50 G	
• Protection degree	IP67 – *IP65 shaft side*	
• Operating temperature	-30 ÷ 70°C	
• Stocking temperature	-30 ÷ 85°C	

ELECTRICAL & OPERATING SPECIFICATIONS

|	
• Operating principle	Magnetic
• Resolution/revoltution	8192 steps/rev – 13 bit
• Revolutions no. (multiturn)	65536 - 16 bit
• Initializing time	< 1 s
• Data memory	>20 years No motion – power off
• Interface	EtherNet/IP™
• Supply	10 ÷ 30 Vdc Protection against polarity reversal
• Power consumption	2.5 W
• Accuracy	± ½ LSB
• Connection	2 M12 female connectors D-coding +1 M12 male connector
• Interference immunity	EN 61000-6-2
• Emitted interference	EN61000-6-4

CONNECTIONS
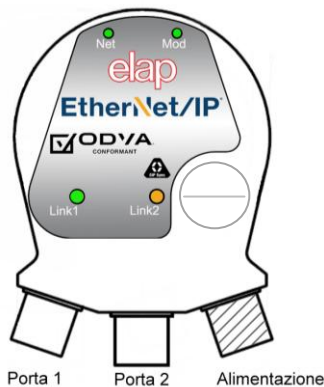
Connector Port1 and Port2 D-code female M12 connector

Pin	Signal
1	Tx+
2	Rx+
3	Tx−
4	Rx−

Supply connector A−code male M12 connector

Pin	Signal
1	+Vsupply (10−30Vdc)
2	N.C.
3	GND (0V)
4	N.C.

Porta 1   Porta 2   Alimentazione
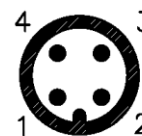
Connection by 2 M12 D-coding female connectors + 1 M12 male (supply)

ORDERING INFORMATION

MEM520B	EIP	M	10

SHAFT Ø /HOLLOW SHAFT Ø
6 – 8 – 10- 12 – 14 – 15 mm

No. of TURNS
M = Multiturn

INTERFACE
EIP = EtherNet/IP™

TYPE
MEM520-Bus = Round flange Ø 58 mm *SYNCHRO FLANGE*
MEM540-Bus = Round flange Ø 58 mm *CLAMPING FLANGE*
MEM620-Bus = Square flange 63.5x63.5 mm
MEM440-Bus = Blind hollow shaft for motor coupling
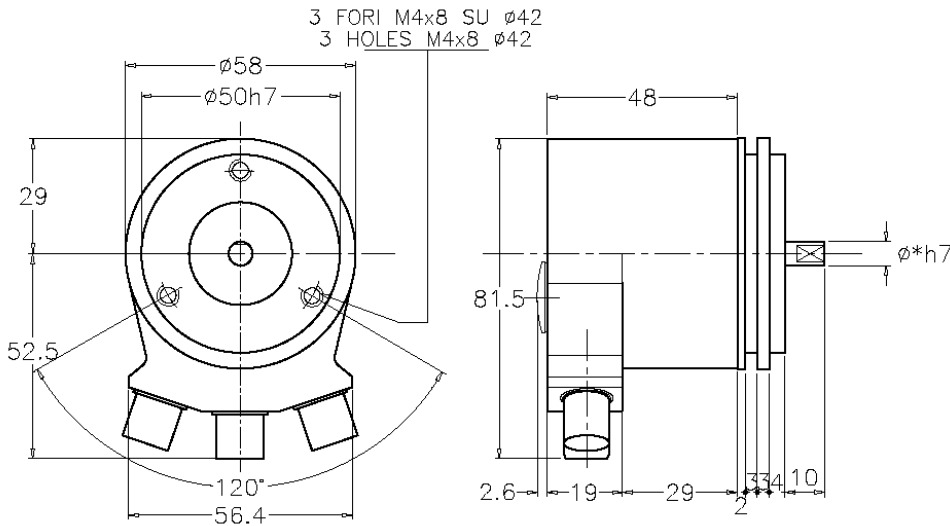**MEM450-Bus** = Blind hollow shaft, fixing by elastic support

ODVA CONFORMANT

CIP Sync

CERTIFICATE NO. 11803.01

c UL us

CERTIFICATE NO.E510647

MEM520-BUS EtherNet/IP™

Ref.M2079

3 FORI M4x8 SU ø42
3 HOLES M4x8 ø42

ø58
ø50h7
29
52.5
120°
56.4

48
81.5
2.6 19 29 334 10
2

* AVAILABLE SHAFT DIAMETERS
8 — 10 length 20mm
6 length 10mm

ø*h7

MEM540-BUS EtherNet/IP™

120°
ø58
ø36h7
N°3 FORI M4X8 SU ø48 120°
N°3 HOLES M4X8 ON ø48 120°

29
52.5
56.4

48
81.5
2.6 19 29 10 20
2

* AVAILABLE SHAFT DIAMETERS
8 — 10 length 20mm
6 length 10mm

ø*h7

MEM620-BUS EtherNet/IP™

ø58
ø31.75h7
4 FORI ø5.3
4 HOLES ø5.3

31.7
84.2
52.5
□52.5
56.4
□63.5

48
81.5
2.6 19 29 6 6 20

* AVAILABLE SHAFT DIAMETERS
8 — 10 length 20mm
6 length 10mm

ø*h7
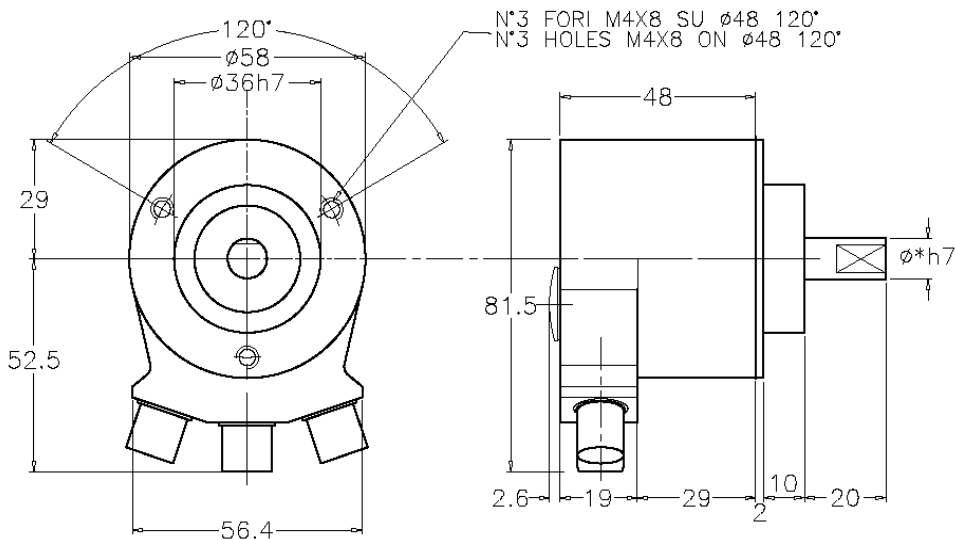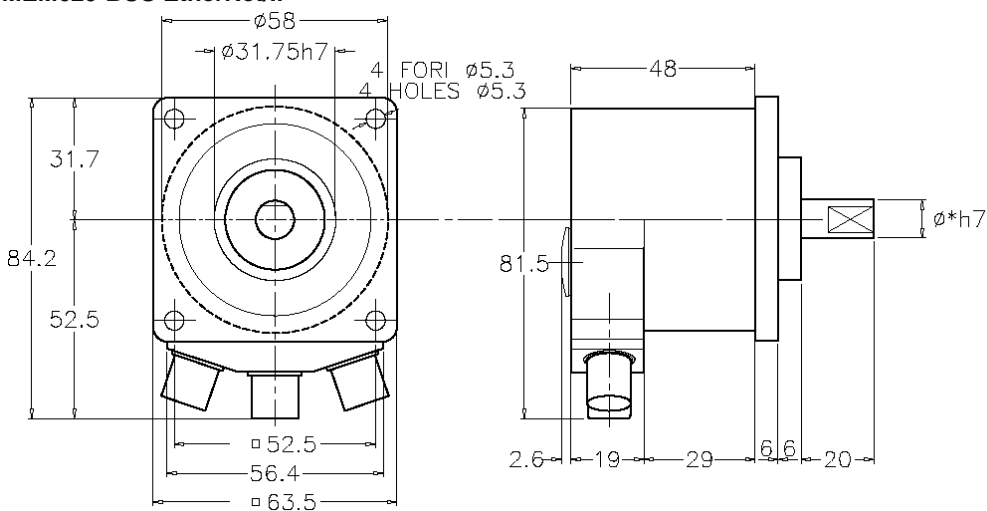
DIMENSIONS

MEM440-BUS EtherNet/IP™

Ref.M2079

GRANO M4
GRUB SCREW M4

N3 FORI M4 SU 120°
N3 HOLES M4 ON 120°

ø*H7

*FORO DISPONIBILE NEI ø
8 — 10 — 12 — 14 — 15mm
* AVAILABLE HOLES DIAMETER
8 — 10 — 12 — 14 — 15mm
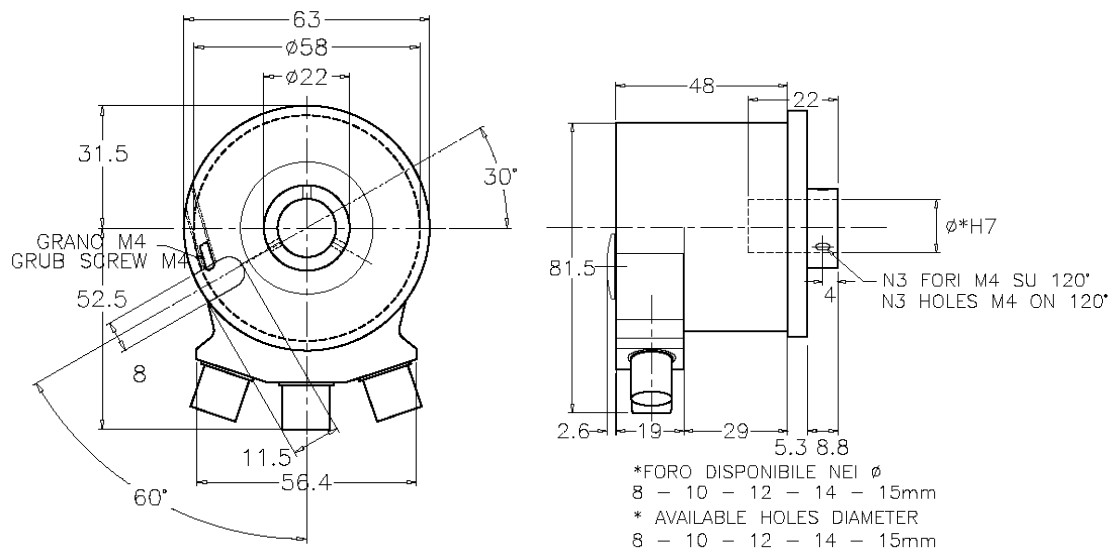
MEM450-BUS EtherNet/IP™

Ref.M2080

ø*H7

* FORO DISPONIBILE nei diametri
8mm—10mm—12mm—14mm—15mm
* AVAILABLE HOLE DIAMETERS
8mm—10mm—12mm—14mm—15mm
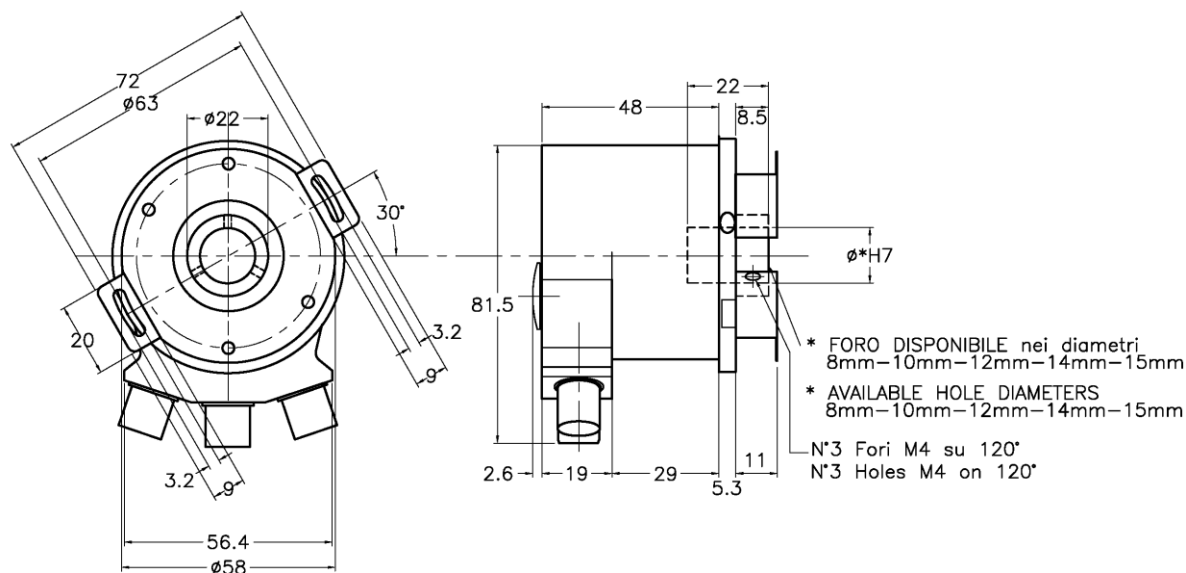
N°3 Fori M4 su 120°
N°3 Holes M4 on 120°

REFERENCES

MANUALS, SOFTWARE and DIMENSIONAL DRAWING DOWNLOAD AT:

https://www.elap.it/absolute-encoders/encoder-mem-bus-ethernet-ip/