



## MEM-Bus Ethernet/IP Encoder

### Features

- High resolution (29 bit)
- DLR (Device Level Ring)
- IP addressing via hardware and software
- Synchronous Real Time transmission worldwide.
- Parameter entering via TCP/IP
- Encoder status diagnostic
- Position, speed and alarms comprehensive data managed by assembly object 110



MEM520-Bus



MEM540-Bus



MEM620-Bus

### Introduction

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 peculiarity which makes it one of the most widespread industrial communication protocols worldwide.

### MEM-BUS EtherNet/IP® Encoder profile

- 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

### Settable parameters (via TCP/IP)

- Steps/revolution
- Revolutions number
- Preset
- Rotation direction
- Speed unit: steps/s, steps/ms, rev./min.
- Position and speed alarm thresholds

### State indicators

- 4 two-color signalling LEDs ensure the state diagnostic:
- Link 1
  - Link 2
  - Net
  - Mod

## EtherNet/IP™



### Programming & operation

Parameters are entered via software via **TCP/IP**. Besides standard **Assembly Objects 1, 2 and 3**, the encoder support the **proprietary 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 + warnings and alarms  |
| 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-time**. **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	Ø 58 mm body Ø 58 mm round flange Servo coupling Ø 50 mm centering mask Shaft Ø 6, 8 or 10 mm	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	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
SIZE 25	SYNCHRO FLANGE	CLAMPING FLANGE		

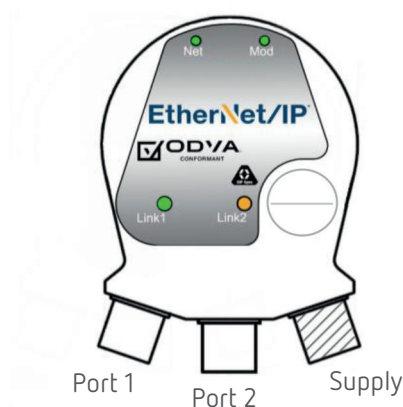
## Mechanical & environmental specifications

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 <sup>2</sup>	
Max load	80 N axial / 100 N radial	
Vibrations resistance (10÷2000 Hz)	100 m/sec <sup>2</sup>	
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/revolution	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 Port 1 and 2  
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 (10-30 Vdc)
2	N.C.
3	GND (0V)
4	N.C.



Connectors and LEDs position

**Ordering information**

<b>MEM520B</b>	<b>EIP</b>	<b>M</b>	<b>10</b>
TYPE	INTERFACE EIP = EtherNet/IP™	No. of TURNS M = Multiturn	SHAFT Ø / HOLLOW SHAFT Ø 6 – 8 – 10- 12 – 14 – 15 mm



CERTIFICATE NO. 11803.01



CERTIFICATE NO.E510647

- 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

**Dimensions**

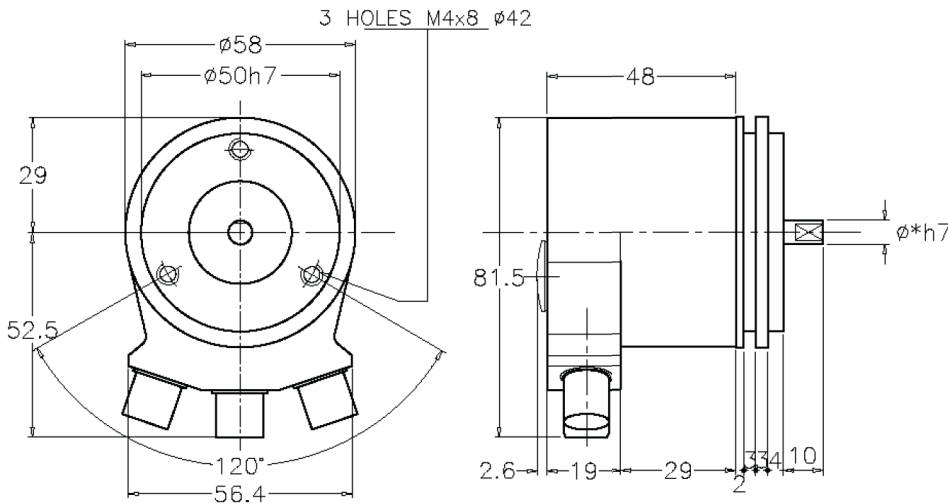
**MEM520-BUS EtherNet/IP™**

Ref.M2079

\* Available shaft diameters

8-10 length 20mm

6 length 10mm

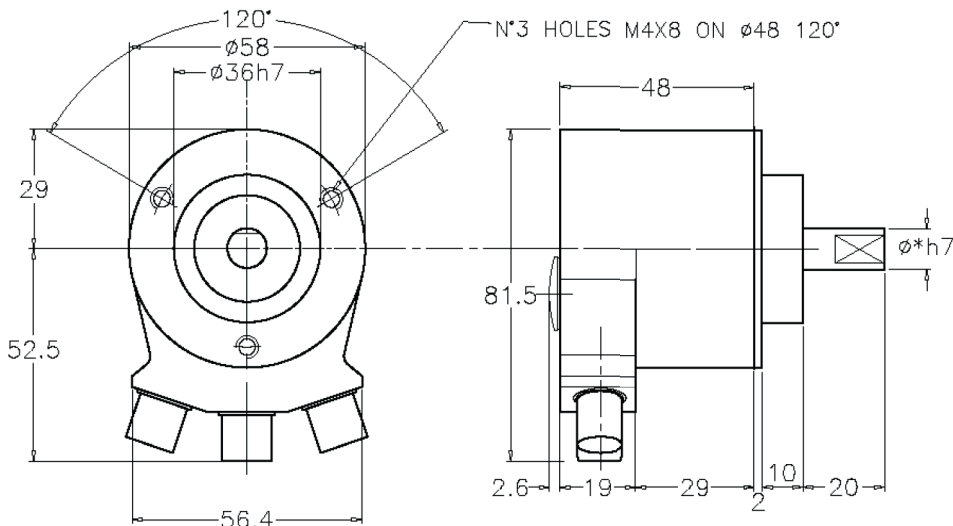


**MEM540-BUS EtherNet/IP™**

\* Available shaft diameters

8-10 length 20mm

6 length 10mm

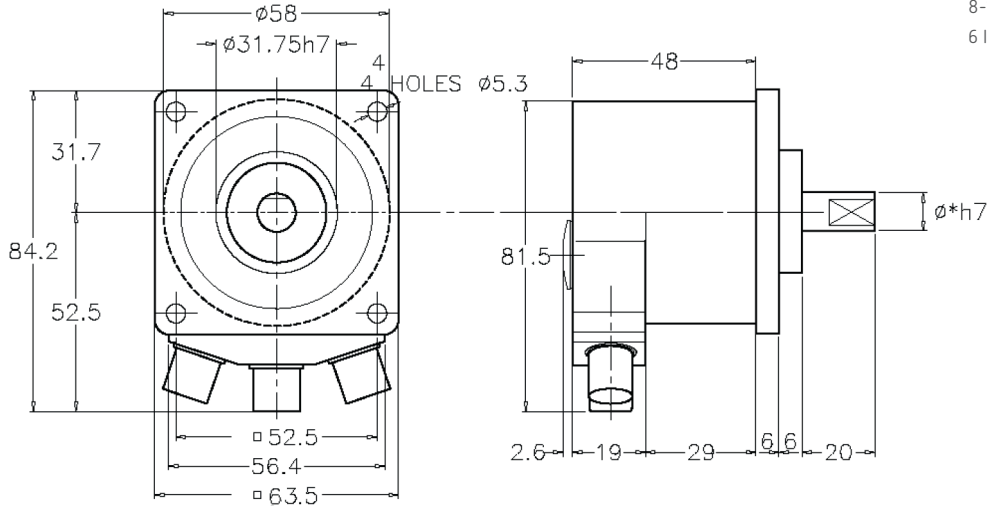


# MEM-Bus Ethernet/IP

Absolute Multiturn Encoder, steady, flexible and fast communication (Ethernet/IP Interface)

## Dimensions

### MEM620-BUS EtherNet/IP™



\* Available shaft diameters

8-10 length 20mm

6 length 10mm

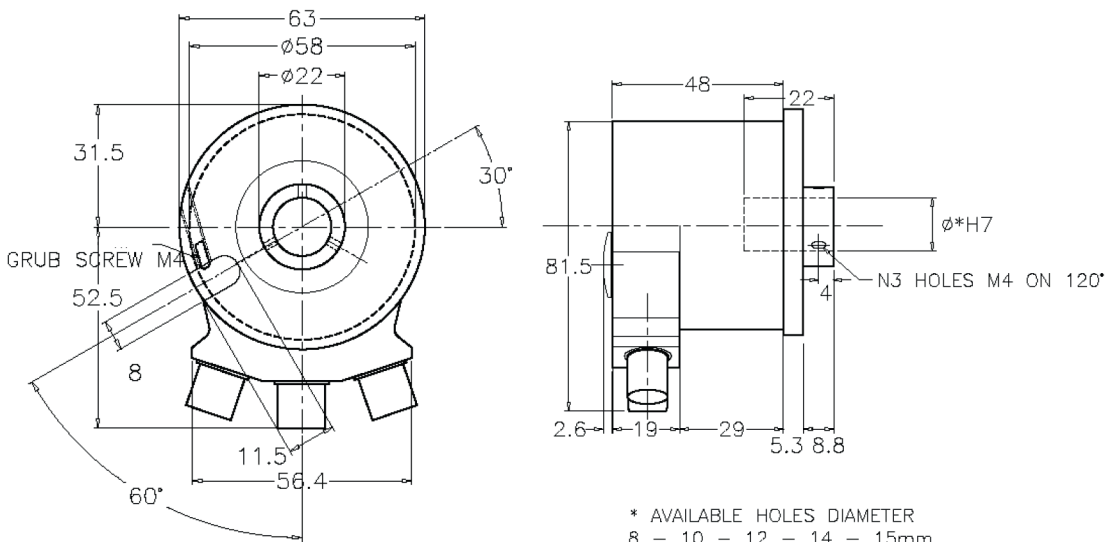
MEM440-Bus



MEM450-Bus

### MEM440-BUS EtherNet/IP™

Ref.M2079



\* AVAILABLE HOLES DIAMETER  
8 - 10 - 12 - 14 - 15mm

# MEM-Bus Ethernet/IP

Absolute Multiturn Encoder, steady, flexible and fast communication (Ethernet/IP Interface)

## ■ Dimensions

MEM450-BUS EtherNet/IP™

Ref.M2080

