



**Inovance**

**INOVA** **Monarch**  
automation

# IS810<sup>e</sup> Series & ISMH Motors

- All CiA 402 Profile supported
- Ethernet Over Ethercat®
- Ultra-fast Current Loop >4kHz
- Multiturn 23 bit serial encoder
- 5 Notch Filters
- Low resonance filter
- Dual-Axes servo rack
- Motor power and encoder in one cable
- Auto detect motor configuration
- Dedicated Ethernet (Modbus TCP/IP)
- Secondary encoder feedback

PSU with  
Common DC Bus

STO



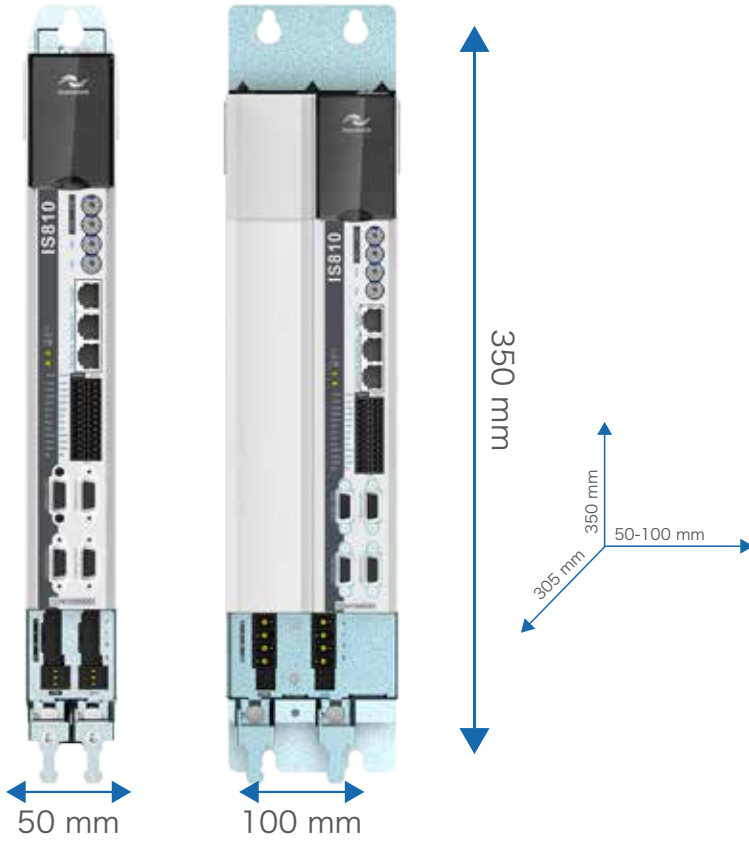
**EtherCAT**

IS810E is a multi-axes platform especially designed for European market. This platform included a lot of advanced features mainly dedicated to obtain maximum performance in the servo high demanding applications. EtherCAT® fieldbus onboard and Ethernet port are standard features available in all drives range.

**ETC algorithm developed by Milan R&D centre gives to this drive excellent performance also with big inertia mismatching and low stiffness mechanical system.**

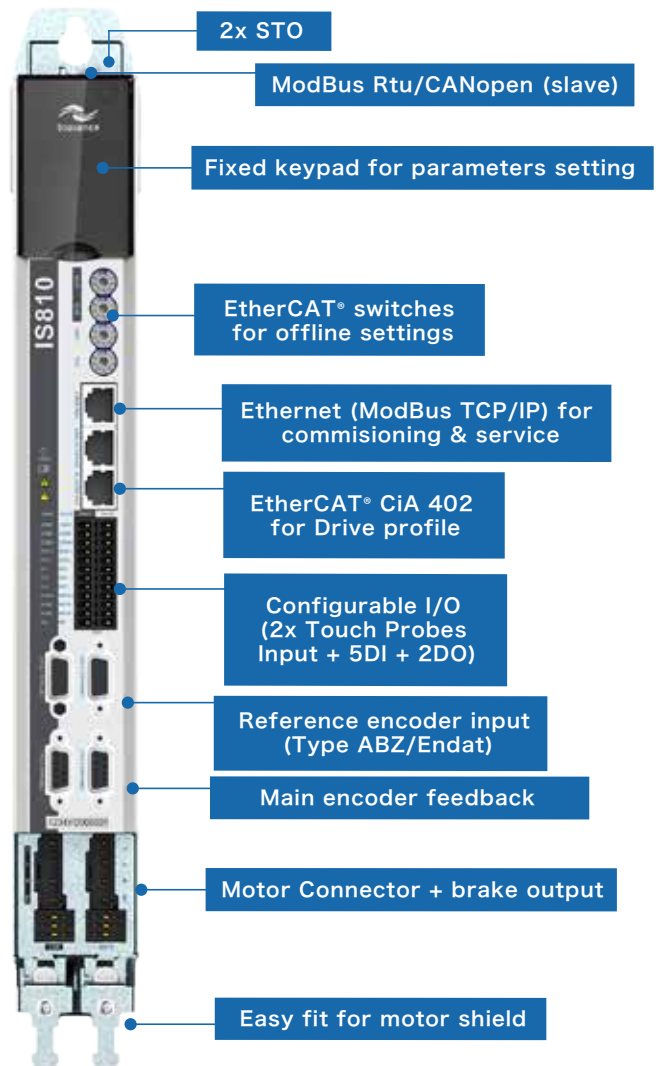
# IS810<sup>e</sup> Series

High performances servo system for motion control applications.



ISMH SERVO MOTOR KEY FEATURES	
<b>High precision</b>	
20 or 23bit resolution single and multi-turn absolute encoder	
<b>Reliable operation</b>	
Maximum IP65 degree of protection with oil seal	
Low cogging torque 1% of rated torque	
<b>Communication</b>	
RS232	
RS585-Modbus	
CAN Link (Optional)	
<b>Wide selection</b>	
Motor frame 40, 60, 80, 100, 130, 180 mm	
Rated torques from 0.318 Nm up to 48.0 Nm	
Low and Medium inertia selection	
Rated speed 1500[rpm] or 3000[rpm]	

IS810E SERIES SERVO DRIVE SPECIFICATION	
<b>High precision</b>	
High current loop bandwidth > 4 kHz	
High speed loop bandwidth 1.2 kHz	
<b>Safety onboard</b>	
· Double STO	
<b>Digital IO</b>	
7 DI (2 Fast Input) + 2 DO	
<b>Network</b>	
EtherCAT® - CiA 402 Motion Profile	
CANopen® - Slave	
<b>Easy to use</b>	
Easy commissioning with key panel	
Fine tuning with PC software(InoServoShop)	
<b>Smart tuning</b>	
Inertia Auto-tuning (On-line/Off-line)	
Automatic Loop Gain Tuning	
5 Notch Filters	
Auto/Manual damping filter for low frequency resonance	



# IS810<sup>e</sup> Series Highlights

IS810E series is engineered to increase performance in the high demanding application.

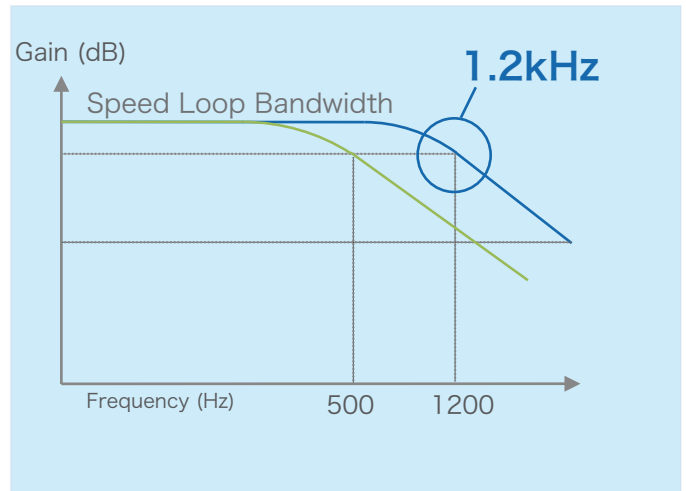
## Improved Performance - Ultrafast Current Loop

Speed loop bandwidth is a measurement of how fast the motor responds. To achieve optimal performance a perfect synchronization without any delay between speed and current loop is needed.

**IS810E has zero time delay between current and speed loop.**

Thanks to this solution the servo drive performance is dramatically increased.

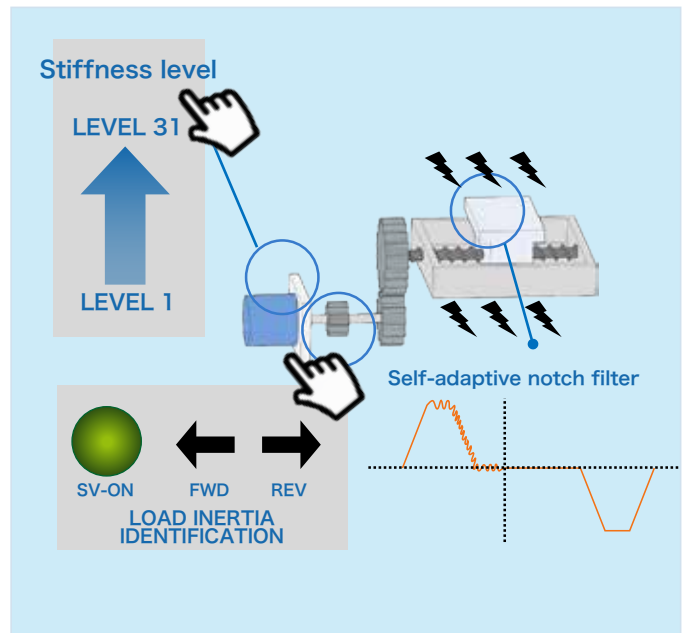
**Short settling time brings a reduced positioning time providing higher throughput.**



## Smart Tuning - Easy Commissioning With Tuning Function

The machine can be optimized using automatic gain function based on the stiffness level to achieve fast response and stability.

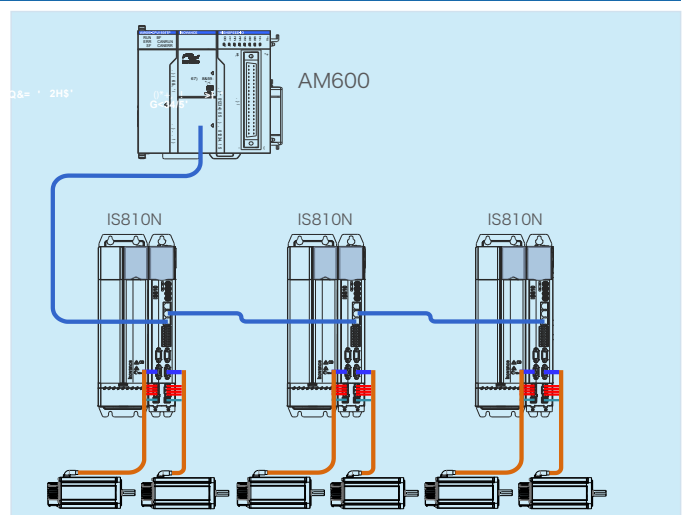
- **Load inertia identification:** on-line and off-line
- **Advanced Gain adjustment:** speed loop and position loop gains can be automatically adjusted by setting the stiffness level
- **Self-adaptive Notch Filter:** the vibration frequency can be automatically detected and a notch filter set accordingly.
- **Damping filter:** suppress vibration from 1 to 100Hz



## Protocol Supported

IS810E supports a range of protocols dedicated to Motion Profile, service and commissioning.

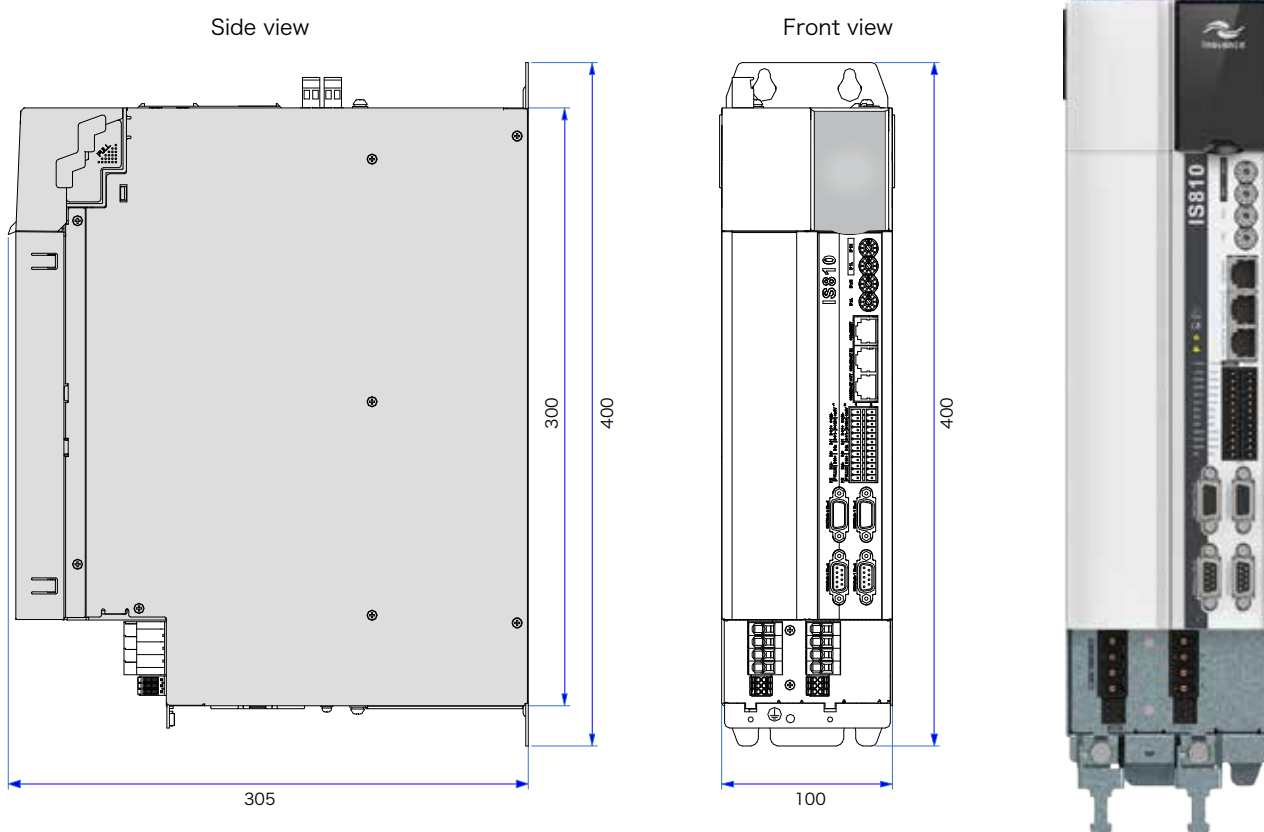
- **EtherCAT®** CiA Drive Profile 402 for Motion Profile. EtherCAT® service supported (PDO, SDO). Synch Mode controlled by Distributed Clock.
- **Modbus Tcp/Ip** for service ,commissioning and to communicate with InoServo-Shop PC tool.
- **CANopen®** slave protocol supported.



## IS810E SIZE 2 D (100 mm wide) Dual- Axes Main Data

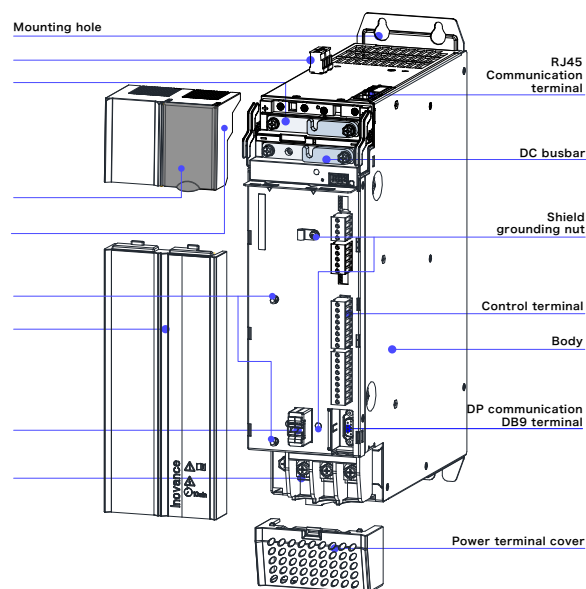
Frame size	SIZE 2 D* (100 mm wide)		
Model No.	T017	T021	T026
Rated current [A]	16.5	20.8	25.7
Maximum current [A]	42	55	65
Input Voltage	Three phases 380Vac ~ 440Vac, +10% ~ -15%, 50/60 Hz		
Control Board Power Supply	24Vdc +/-10%		

## IS810E Servo Drive Dimension Size 2 (100 mm wide)



## IS810E Power Supply Module

Frame size	45 kW (100 mm wide)
Model No.	112
Rated current [A]	112A (no overload)
VDR	standard
Integrated DC Filter	standard
Input Voltage	Three phases 380Vac ~ 440Vac, +10% ~ -15%, 50/60 Hz
Built-in Braking resistor	40Ω, 19kW (Pulse) (External Braking Available Min Value 20Ω)



# IS810<sup>e</sup> Series Technical Data

Servo drive specification.

## Model Designation

# IS810 N 50M 4T D 3R5 INT

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① **Product category:** Servo Drive

② **Drive type:** N (network)

③ **Unit type:** 50M = drive unit (50 mm wide)  
100M = drive unit (100 mm wide)

④ **Voltage class:** 4T= 380 to 480 V

⑤ **Number of axes:** D= Dual Axes

⑥ **Rated current:**

DUAL AXES	3R5	5R4	8R4	012
Rated Current	3.5 A	5.4 A	8.4 A	12 A
DUAL AXES	017	021	026	
Rated current	16.5 A	20.8 A	25.7 A	

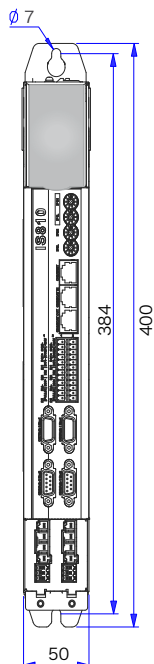
⑦ **Model:** INT= international

## IS810E SIZE 1 D (50 mm wide) Dual-Axes Main Data

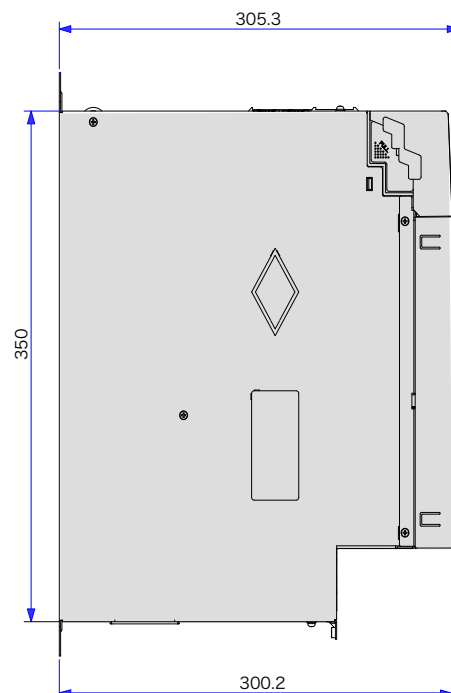
Frame size	SIZE 1 D* (50mm wide)			
Model No.	T3R5	T5R4	T8R4	T012
Rated current [A]	3.5	5.4	8.4	11.9
Maximum current [A]	8.5	14.0	20.0	24.0
Input Voltage	Three phases 380Vac ~ 440Vac, +10% ~ -15%, 50/60 Hz			
Control Board Power Supply	24Vdc +/-10%			

## IS810E Servo Drive Dimension Size 1 D (50 mm wide)

Front view



Side view



# ISMH Servo Motors

Reliable operation, wide selection.

Servo motor model	Rated output [kW]	Rated torque [Nm]	Peak torque [Nm]	Rated current [Arms]	Peak torque [Nm]	Rated speed [RPM]	Peak speed [RPM]	Torque constant [Nm/Arms]	Rotary inertia [ $10^{-4}$ Kg · m <sup>2</sup> ]	Voltage [V]
<b>ISMH2 (Vrated = 3,000RPM, Vmax = 5,000/6,000 RPM)</b>										
ISMH2-10C30CD-****	1.0	3.18	9.54	3.65	11.00	[RPM]	[RPM]	0.87	1.87(3.12)	380
ISMH2-15C30CD-****	1.5	4.90	14.7	4.5	14.00		5000	1.09	2.46(3.71)	
ISMH2-20C30CD-****	2.0	6.36	19.1	5.89	20.00	3000	5000	1.08	3.06	380
ISMH2-25C30CD-****	2.5	7.96	23.9	7.56	25.00			1.05	3.65	
ISMH2-30C30CD-****	3.0	9.8	29.4	10.00	30.00			0.98	7.72	
ISMH2-40C30CD-****	4.0	12.6	37.8	13.60	40.80			0.93	12.1	
ISMH2-50C30CD-****	5.0	15.8	47.6	16.00	48.00			1.07	15.4	
<b>SMH3 (Vrated = 1,500RPM, Vmax = 3,000 RPM)</b>										
ISMH3-85B15CD-****	0.85	5.39	13.5	3.30	8.25	1500	3000	1.75	13(15.5)	380
ISMH3-13C15CD-****	1.3	8.34	20.85	5.00	12.50			1.78	19.3(21.8)	
ISMH3-18C15CD-****	1.8	11.5	28.75	6.60	16.50			1.8	25.5(28)	
ISMH3-29C15CD-****	2.9	18.6	37.2	11.90	28.00			1.7	55(57.2)	
ISMH3-44C15CD-****	4.4	28.4	71.1	16.50	40.50			1.93	88.9(90.8)	
ISMH3-55C15CD-****	5.5	35.0	87.6	20.85	52.00			1.80	107(109.5)	
ISMH3-75C15CD-****	7.5	48.0	119	25.70	65.00			1.92	141(143.1)	

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