

# EM301

## Explosion-proof weight Indicator and controller

EM301 is an industrial process controlling explosion-proof weight indicator and controller, using flameproof and intrinsic safety design. It can be used in dynamic weighing. Equipped with a variety of PLC bus interfaces, also provides humanized HMI interface, it is convenient for the special weighing applications.

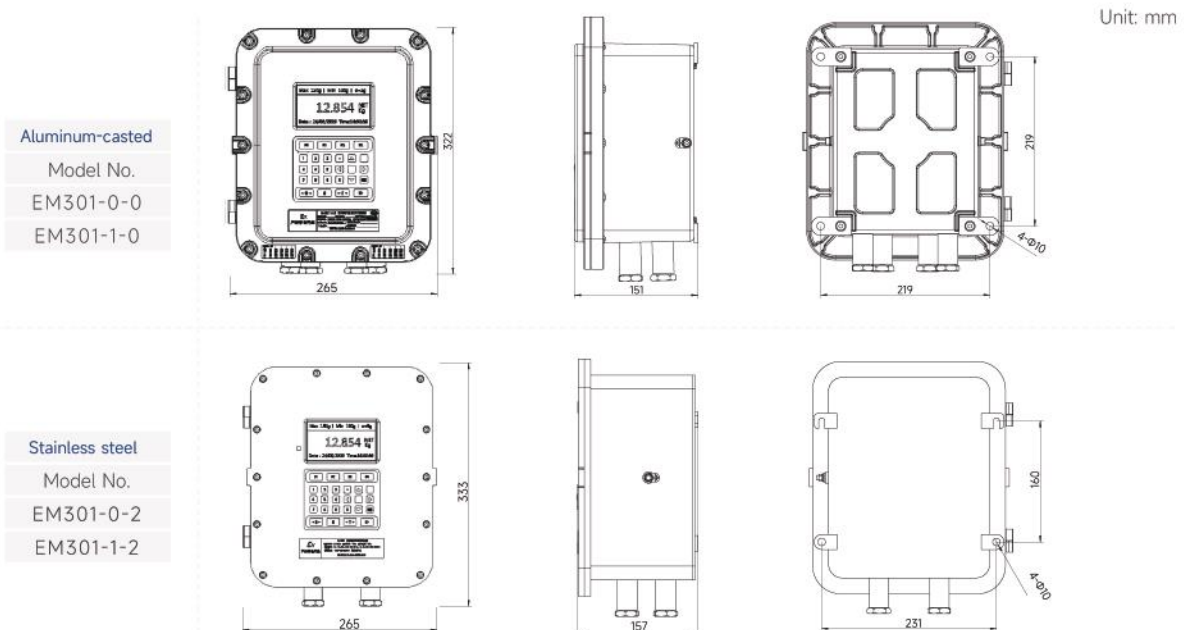


### Key features

- Ex **Safety grid not required**
  - load cell interface intrinsic safety loop design.
- Ex **Color screen display**
  - Certification accuracy: 6000e
  - 4.3 "full color screen
- Ex **Square structure design**
  - IIC explosion-proof rating.
  - High utilization of internal space, easy installation and maintenance, 26-Keypads design, good operation experience
- Ex **Common Communication interface**
  - Standard isolated RS232 and isolated RS485; CAN, LAN Optional Analog output, 4-20mA/0-10V; discrete I/O port, 8 inputs and 8 outputs.
- Ex **PLC fieldbus interface**
  - Profibus-DP, CC-Link, Profinet, EtherNet/IP, Modbus-RTU, Modbus-TCP
- Ex **Typical application programming**
  - basic weighing, check-weigh, filling/dosing, lose-in-weigh application.



### Dimensions



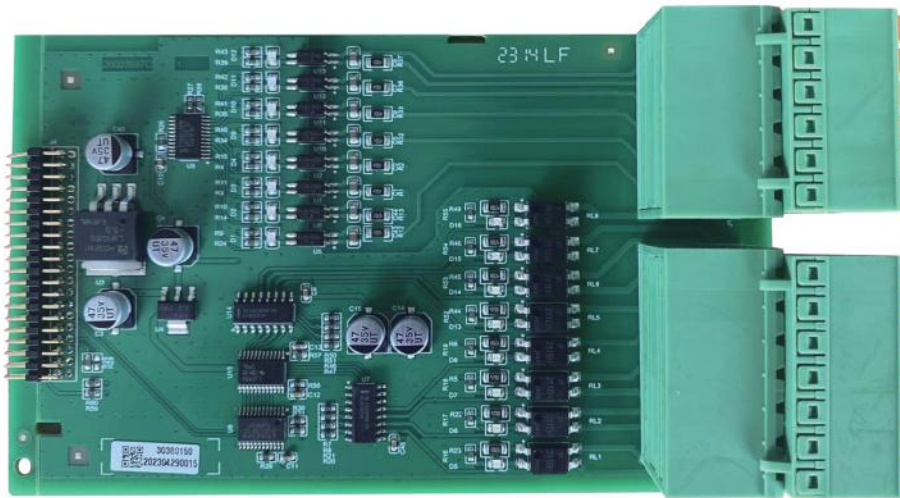
**Specifications**

Product model	EM301-0-2	EM301-0-0	EM301-1-2	EM301-1-0		
Materials	stainless steel (0Cr18Ni9)	cast aluminium (ADC12)	stainless steel (0Cr18Ni9)	cast aluminium (ADC12)		
Cavity size (LxWxH)mm	259x207x132	226x175x115	259x207x132	226x175x115		
Weight (Kg)	24	12	25	13		
Explosion-proof sign	Ex db ib [ib Gb] IIB+H2 T6 Gb; Ex ib tb [ib Db] IIIC T80°C Db		Ex db [ib Gb] IIC T6 Gb; Ex tb [ib Db] IIIC T80°C Db			
AC Power	85-264VAC / 18-36VDC					
Protection degree	IP68(2m/2h)					
Operating temperature	-20 ~ +60					
Service entrance	G3/8" M16x1.5	G1/2" M20x1.5	G3/4" M25x1.5			
Applicable cable diameter	Φ4-Φ9		Φ6-Φ13			
Intrinsic safety parameter	Loop	Uo(V)	Io(mA)	Po(mW)	Co(μF)	Lo(mH)
	+EXC	7.14	342	397	13.5	0.7
	+SEN	7.14	342	397	13.5	0.7
	+SIG	7.14	342	397	13.5	0.7
	-SIG	7.14	342	397	13.5	0.7
	-SEN	7.14	342	397	13.5	0.7
	-EXC	7.14	342	397	13.5	0.7
Display screen	4.3 " TFT full color screen					
Number of verification scale intervals (e)	6000					
Number of scale intervals for indicator (d)	100000					
Number of sensors	Up to 6 350 ohm load cells (2 or 3mV/V)					
AD sampling rate	1000Hz					
Load cell Excitation	5VDC					
Minimum sensitivity	0.5 μV/e					
Accuracy class	III					
KeyPad	4 key top bar button; Film keyboard (expandable up to 32 keys)					
Communication protocol	Command output, Continuous output, Modbus RTU, Modbus TCP PROFINET, EtherNet/IP					
Calibration method	Weight calibration; Weight-free calibration; Remote calibration					
Scale	1					
Capacity	1-500,000 (default 60)					
Increment size	0.0001/0.0002/0.0005					
	0.001/0.002/0.005					
	0.01/0.02/0.05 (default 0.01)					
	0.1/0.2/0.5					
	1/2/5					
	10/20/50/100					
Serial ports	1 way RS485 (isolation)					
	1 way RS232 (isolation)					
	1 way CAN (isolation)					
	1 way LAN					
Baud rate	1200, 2400, 4800, 9600 (default) ,19200, 38400, 57600, 115200					
DIO interface	4 inputs (optocoupler isolation) /4 outputs (relays, transistors)					
Analog quantity ※	1 way 4-20mA or 0-10v					
8DIO Interface expansion board ※	8 inputs (optocoupler isolation) /8 outputs (relays, transistors)					
8RLY Interface expansion board ※	8 inputs (optocoupler isolation) /8 outputs (relays, transistors)					
Industrial bus option board ※	PROFINET, EtherNet/IP, Profibus-DP, CC-Link					

Note:The list marked with ※ is optional, customers need to purchase separately.

Optional board

## EM301 8DIO board



8DIO board	Feature	Terminal mark	Terminal function description	Electrical specification
Input/output	Extended input/output signal interface	IN_COM	Extended input Com	Input point mode: Input point 1-8 is active input, input point common source mode Input voltage range: 5-30VDC Input current range: < 10mA
		IN1	Extended input 1	
		IN2	Extended input 2	
		IN3	Extended input 3	
		IN4	Extended input 4	
		IN_COM	Extended input Com	
		IN_COM	Extended input Com	
		IN5	Extended input 5	
		IN6	Extended input 6	
		IN7	Extended input 7	
		IN8	Extended input 8	
		IN_COM	Extended input Com	Output point mode:  Output points 1 and 5 are passive normally open outputs of solid-state relays. Output drive capacity: <30VDC 0.5A or <30VAC 0.5A  Output points 2-4 and 6-8 are passive normally open outputs for solid-state relays Output drive capacity: <30VDC 0.5A or <30VAC 0.5A The maximum total output current is 2A The single-channel on-resistance is 0.25Ω
		OUT1	Extended output 1	
		OUT_COM1	OUT1 output terminal	
		OUT_COM	Extended output Com	
		OUT2	Extended output 2	
		OUT3	Extended output 3	
		OUT4	Extended output 4	
		OUT_COM	Extended output Com	
		OUT_COM5	OUT5 output terminal	
OUT5	Extended output 5			
OUT_COM	Extended output Com			
OUT6	Extended output 6			
OUT7	Extended output 7			
OUT7	Extended output 8			
OUT_COM	Extended output Com			



## EM301 8DIO board



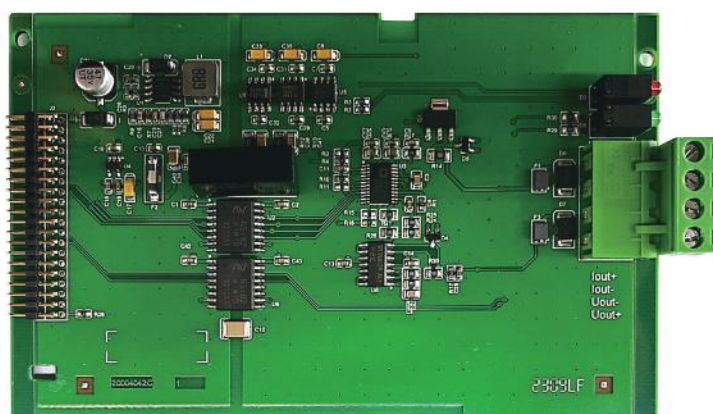
8RLY DIO board	Feature	Terminal mark	Port function description	Electrical specification
Input/output	Extended input/output signal interface	IN_COM	Extended input Com	Input point mode: Input point 1-8 is active input, input point common source mode Input voltage range: 5-30VDC Input current range: < 10mA
		IN1	Extended input 1	
		IN2	Extended input 2	
		IN3	Extended input 3	
		IN4	Extended input 4	
		IN_COM	Extended input Com	
		IN_COM	Extended input Com	
		IN5	Extended input 5	
		IN6	Extended input 6	
		IN7	Extended input 7	
		IN8	Extended input 8	
		IN_COM	Extended input Com	Output point mode:  Output points 1 and 5 are passive normally open outputs of the relay, The output contact is a separate mode Output drive capacity: 5-24VDC 1A or 24-250VAC 1A  Output points 2-4 and 6-8 are passive normally open contacts of the relay, and the output contacts are in a common source form The output driving capability is: 5-24VDC 1A or 24-250VAC 1A, The maximum total output current is 3A
		OUT1	Extended output 1	
		OUT_COM1	OUT1 output terminal	
		OUT_COM	Extended output Com	
		OUT2	Extended output 2	
		OUT3	Extended output 3	
		OUT4	Extended output 4	
		OUT_COM	Extended output Com	
		OUT_COM5	OUT5 output terminal	
OUT5	Extended output 5			
OUT_COM	Extended output Com			
OUT6	Extended output 6			
OUT7	Extended output 7			
OUT7	Extended output 8			
OUT_COM	Extended output Com			

## EM301 Profinet/EtherNet/IP board



Profinet board	Feature	Terminal mark	Port function description	Electrical performance
Network link	Communication	J1/J11	Follow Profinet protocol and Siemens PLC communication	Port rate: 10Mbps/100Mbps self-adaptation

## EM301 Analog board



Analog board	Feature	Terminal mark	Terminal function description	Terminal function
Analog output	Voltage output	V0	Voltage output	Output range: 0-10V DC Load: $\geq 1k\Omega$
		VGND	Voltage output grounded	
	Current output	A0	Current output	Output range: 0-20mA DC Load: $\leq 500\Omega$
		AGND	Current output grounded	