

EUROB9016 Intelligent Pressure Adjuster

Operation Manual

EUROHEATERS
European leader in electric heating

Thanks for choosing the EUROB9016 Intelligent Pressure Adjuster manufactured by our company. This operation manual introduces in detail about the functions and methods of operation for intelligent pressure adjuster. Before usage, please read this manual carefully for instructions.

EUROB9016 intelligent pressure adjuster is the new concept industrial automation control instrument designed and manufactured by the Company. This product integrates the advantages of similar overseas products of 90's, and has its own characteristics. It's especially suitable for the measurement and control for the pressure of high temperature melt, and for circumstance in which electrical grid is fluctuating. The product is of beautiful appearance, complete function, superb anti-interference property, which will make the system reliable.

This meter adopts dual level four digit numerical tube to display the actual pressure readings and set values, the output windows uses single row bar code to display output power. It has pressure lower limit and upper limit alarm function, can realize relay contactor output, pressure pulse output, toggle output driven by dual direction silicon controlled; constant current (or constant pressure) output, fully automatic front panel commissioning program, the system calibration takes only a press; the meter adopts three anti interference measures, which furnish reliability to the adjuster: firstly, it uses photoelectrical circuit to segregate input and micro processor, to segregate micro process and output, and to segregate power and input, micro processor, output, respectively; secondly, it adopts software anti interference measure, make the software work reliably; thirdly, it adopts hardware program monitoring system, it enables the hardware to restore the normal work automatically after being interfered. The practice demonstrated that abovementioned anti interference measures endows the system software with high reliability, make sure that the system is stable and reliable, the output power is combination of PID and fuzzy control, realizes the non disturbance switch between manual and auto control, meanwhile the power output is of step style.

This product is widely employed in the measurement and control for the pressure of high temperature melt in petrol, chemical fiber, and plastic industry.

Major technical indexes and performance

1. Dual channel alarm setting: upper limit 0~99.99Mpa, lower limit 0~99.99Mpa;
2. Rated value of relay: 250VAC, 5A;
3. Usage environment: 10~+50°C, 5A;
4. Power: 85~265VAC;
5. Continuous working period: long term;
6. Opening and installation dimensions: 90×90×110 mm;
7. Numerical displaying digit: dual level four digit.8;
8. Internal resolution: 32000;
- 9.External resolution: 0.01 MPa, 0.02 MPa, 0.05 MPa, front panel switch (power break protection fitting \geq 40 years);
- 10.Non linearity: 0.5% \pm one unit; 0.2% \pm one unit, 0.1% \pm one unit, 0.05% \pm one unit.

Appearance and structural dimensions **Introduction to display window**

Upper displaying window: displaying actually measured pressure and parameter codes when modifying

internal parameteres.

Lower displaying window: displaying the setting value of control pressure in automatic status and displaying the output power value in manual status. Displaying the modified parameters when modifying internal parameters.

OUT window: single row bar code displays output value, among which single bar code blinks displaying the output power limitation value.



 : zero clearing button (press together with switch button can realize zero clearing, press AC button alone for above five seconds can restore to zero which is the zero position upon calibration).

 : Calibration button (press with Switch Button together can realize automatic calibration)

 : Switch button

 : Shift Button

 : Decrement button

 : Increment button

 : Manual/auto switch button

Indicator introduction AL1:

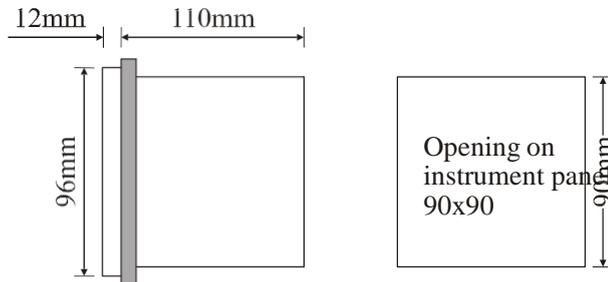
Upper limit alarm light **AL2:**

Lower limit alarm light

CAL: calibration status indicator (when conducting automatic calibration, this light blinks)

MAN: Manual status indicator (when in automatic status, the light is off)

Installation dimensions diagram



Use Methods

The instrument is connected with pressure sensor

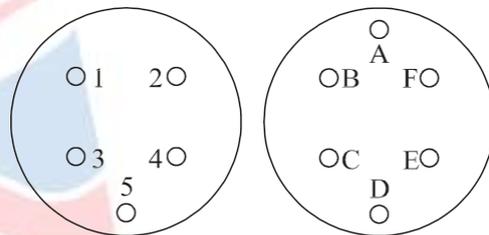
(A)S+ Signal positive (blue) (C).....

E+ bridge pressure positive (red)

(B).....S- signal negative (yellow)

(D, E)...E- bridge pressure negative (white)

(F) C calibration (green)



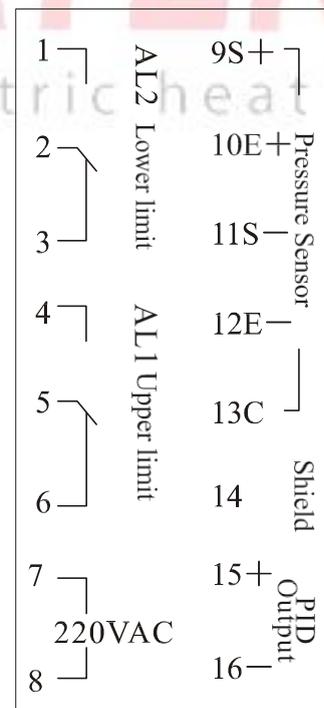
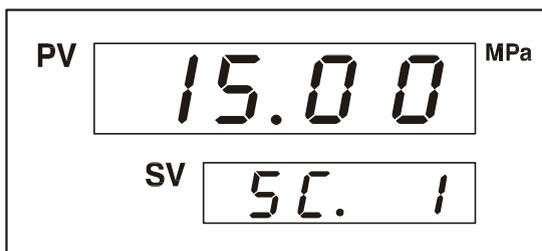
The wiring of sensor plug is as above: (those marked with numbers are Class I, and those marked with letters are Class II, please note when ordering)

Connect all the wires with the wiring terminals behind the meter (there are marks on wiring terminals), the shielded wires are to be earthed.

2. The wiring marks of the back panel of pressure gauge are as following:

3: Startup:

Switch on, and the pressure gauge conducts startup self check, meanwhile PV screen displays measurement range; SV screen displays calibration status and minimum resolution. When the thousand and hundred digit of SV screen displays SC, it means that the system is working at linear measurement status, when the thousand and hundred digit of SV screen displays EC, it means that the system is working at non linear measuring status, (which is design reservation, for the time being this function is not provided), the unit oneth displays the present minimum resolution (optional of 1, 2, 5, refer to section for dv internal parameter setting).



4. Measuring working status

The upper displaying window displays measured pressure, the lower window displays current manual power value. When there is temperature floating or time floating after startup, we can keep pressing the AC zero clearing button, the other hand clicks Switch button to clear present zero digit. When zero clearing conducted mistakenly we can press the AC button for 5 seconds to restore the zero of calibration. Click Increment button, then the manual power output increases, PV window pressure value increases, on the contrary, press the Decrement button, then manual output pressure decreases, and PV screen pressure value decreases and the bar code display value on OUT window increases and decreases with the increase and decrease of power display value on SV window. When pressure value on PV window comes close to set control pressure value, press M/A button to switch into PID automatic control, meanwhile, MAN indicator is off, while OUT window still displays the PID output value under automatic status.

Note: if OUT window has one single bar code blinking, the corresponding indicative value is the maximum PID output limit, when PID output equals to maximum limit, this single bar code is no more blinking.

5. SV set value adjustment status:

1. Click switch button to switch to this status. Under this status, we can adjust SV set value. Each time we come to the adjusting status of SV set value, the minimum digit on SV display window blinks. SV setting value can be easily adjusted by Shift button, Decrement button and Increment button. The modified SV setting value can only be effective after Switch button is pressed. SV value of EUROB9016 meter is the set value of automatic control pressure.

2. When there's no button operation for more than one minute, the system will automatically switch to PV/SV status. Then the new SV value is invalid.

6. Internal parameter adjustment status:

1. Hold the switch button for more than 5 seconds under the adjusting status of SV setting value, the system enters internal parameter adjusting status.

2. Each time we press Switch button, internal parameter is displayed sequentially and PV displaying window shows the symbol of internal parameters, while SV window displaying the current setting value.

3. Shift button, Decrement button and Increment button can modify the current setting value.

4. To save the newly set value, Switch button shall be pressed for confirmation, meanwhile the next index is called out.

5. Hold Switch button for more than 5 seconds, or there's no button operation for over one minutes, the system will automatically switch from internal parameter adjustment status to PV/SV displaying status.

6. Hold AC button while clicking on Switch button, we can conduct zero clearing. Hold AC button for more than 5 seconds we can restore the actual pressure zero value upon last calibration.

7. Press Calibration button and Switch button at the same time, to conduct automatic calibration. Refer to the section for system pressure calibration.

Symbol	Name	Set range	Note	Ex-factory default
RN RN	Measurement range	10.00MPa~100.0MPa	Rated pressure measurement value	Matching sensor's measurement range
dv dv	Division value	0.01, 0.02, 0.05 MPa	The minimum resolution of PV value	0.02 MPa
AL1 AL1	First alarming (upper limit)	00.00~99.99MPa	Set first alarming (upper limit)	80% of RN
AL2 AL2	Second alarming (lower limit)	00.00~99.99MPa	Set second alarming (lower limit)	10% of RN
LD LD	Return difference	0~2.00MPa	Alarm return difference setting	0.00MPa
E-Sc E-Sc	Working status	00.00:linear working status		00.00

E-Sc E-Sc		00.01:non-linear working status		
P P	Ratio belt	000.1~999.9	Set the P index of ratio belt for PID index	060.0
I I	Integral time	000.0~999.9 second	If the I function is closed we can set I as "0"	010.0
D D	Differential time	000.0~999.9 second	If we close D function the D can be set as "0"	000.0
OL OL	Output limit	0~199%	The maximum limit of PID output	100%
Sbr SBR	Power output when sensor is open	0~100%	The power output of PID when sensor is open	0%
LCK LCK	Digital lock	0000 key is valid, can modify the index 0001 cannot modify the set index, only switch button is valid, other keys are not.	Through the setting of digital lock, we can lock the keys on front panel and internal parameter	0000

Ordering note: please place orders according to following note:

Basic product

Model

Intelligent pressure adjuster

EUROB9016

Function

Notes on functions	
1. Dual level four digit tube display, output power bar code display	4. Measurement range panel selection
2. Relay contactor output of upper and lower limit	5. Minimum resolution selection
3. Automatic calibration system	Function of parameter setting locking

Pressure range

Measurement range	Serial number	Measurement range	Serial number
0~10MPa	010	0~40MPa	040
0~15MPa	015	0~50MPa	050
0~20MPa	020	0~60MPa	060
0~25MPa	025	0~70MPa	070
0~30MPa	030	0~80MPa	080
0~35MPa	035	0~100MPa	011

PID output power, for converter and speed controller

Output mode	Serial number	Output mode	Serial number
Non output	100	0~20 mA (maximum 6V)	104
0~5V (maximum 20 mA)	101	4~20 mA 9maximum 6V)	105
1~5V (maximum 20 mA)	102	0~10V (maximum 20 mA)	106
0~10 mA (maximum 6V)	103		

Alarming

Number	First digit number	Second digit number	Third digit number
0	No alarming	No alarming output	No alarming indication
1	Pressure upper limit	Relay output	Lighting diode indication
2	Pressure lower limit	Silicon controlled output	
3	Belt mode	Voltage pulse output	

Note: If this serial number is 311, in which the first digit three (3) means belt alarming; second digit one (1) means relay switch output; the third digit one (1) means lighting diode output.

Silicon controlled dual end output 800V/5A.

Ordering format

Basic product	Function	Pressure measuring range	Poweroutput	Alarming	End
▼	▼	▼	▼	▼	▼
EUROB9016	—	—	—	—	00

Ordering example

EUROB9016-035-105-311-00

EUROB9016 intelligent pressure adjuster 35 MPa, power output of 4~20 mA, alarming indication of upper and lower pressure limit, and output by relay.

System pressure calibration

System zero pressure self-calibration: Connect the high temperature melt pressure sensor with EUROB9016 intelligent pressure adjuster according to manual, meanwhile connect the 220V AC power. After system conduct startup and self-check, press the Cal button, and press switch key, the system begins to automatically self calibrate, and the calibration light starts blinking. During calibration hold the switch button till calibration ends. After calibration, the system will return to working status automatically.

Please note: before self-calibration we must release the lock (which means the LCK index in internal parameter table is set as 0), otherwise there will be no response to Cal key and switch key. This function is to prevent the mis operation by site workers.; measurement range index “RN) can be set before calibration, or after calibration. While calibrating the sensor’s sensing head must be under zero pressure.

Note

1. The sensor head must be protected against collision, tighten the protection cap for storage.
2. Instrument shall be placed in dry environment.
3. It must work under rated voltage, otherwise troubles might occur.
4. If the temperature floating is high, hold the AC button and Switch button at the same time to calibrate the zero position. If zero clearing is conducted mistakenly, hold AC button for over five seconds to restore the normal temperature calibration zero.

Maintenance

1. Numerical display of 88.88 or “--.--“usually indicates breaking of sensor wire, or poor contact. Connecting the wire can solve the problem.

2. When there is no number displayed, please confirm the connection of 220v AC. If not connected, check if there is output from the power switch.

3. Number flashing: usually due to poor grounding of the earthing wire, connect shield wire to ground.

4. If serious failure occurs due to wrong wiring, user can contact the Company for parts replacement, such as power panel, CPU board, and display panel, etc.

5. If user has trouble fixing the failed parts, please send it to the Company by mail, we guarantee free maintenance within one year. We also provide lifelong maintenance.

Factory set

No.	Name	Unit	Quantity	Note
1	EUROB9016 intelligent pressure adjuster	Unit	1	
2	Sensor	Piece	1	Optional on user's requirement
3	Cable	Meter	3	Socket on one end
4	Installation bracket	Piece	2	
5	Operation manual	Copy	1	
6	Certificate	Copy	1	