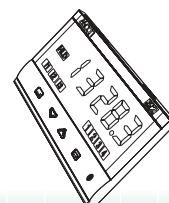
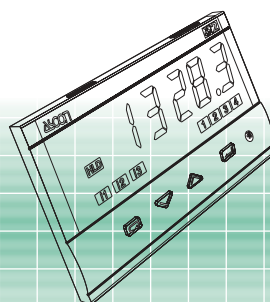
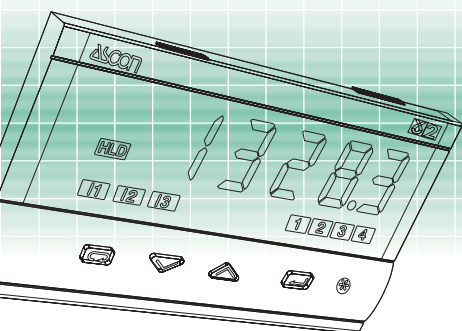


Indicator - Transmitter Strain Gauge Input for Melt Pressure & Load Cell Transducers 1/8 DIN - 96x48 mm gamma**due**® series, **J5** line



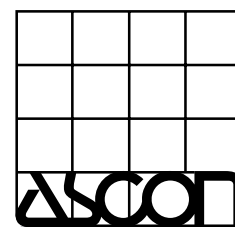
Accurate measurement of melt pressure and other process variables are provided by J5. The J5 is fully configurable from the keyboard or by means of a software configuration tool. The J5 display utilizes a large, bright 5 digit LED that can be configured to operate in green or red. The display can be configured to change color when in alarm condition.

- **Accuracy:** 0.1%
- **Measurement resolution:** 16 bit.
- **Overall response time:** 20 ms.
- **Display resolution:** configurable 1... 100 digit.
- **Main input:** 350Ω strain gauge, linear DC voltage and DC current. Square root extraction 16 segments linearizer for "custom" input.
- **Second input:** DC voltage and DC current. Suitable for temperature indication and signal conditioning (min., max., average, ratio, etc.) when combined with the Main input.
- **3 Digital inputs:** Independently configurable for alarms, display, and calibration handling...
- **Alarms:** 2 or 4 with ISA-A acknowledge.
- **Retransmission output:** optional, DC current
- **Communications:** optional, Modbus RS485.
- **Parameters protection:** 3 password levels.
- **Front protection:** IP65.



E

ISO 9001 Certified





gamma^{due}[®]

the right solution to your needs

J5 line

The right solution for Melt pressure and Load cells applications

The 350Ω strain gauge bridge of the Melt pressure or load cell transducer can be energized by an internal stabilized 5 or 10Vdc. The reliability of the strain gauge is continuously monitored.

A simple front panel calibration routine is provided to automatically remove zero and span offsets. The automatic calibration routine can also be activated by using one of the three standard digital inputs, as well as being activated over serial communications. Tare function for load cells application is also provided.

Also available with the J5 indicator are: analogue retransmission, RS485 Modbus communications and additional configurable relay alarms with ISA type A alarm functions make the J5 indicator ideal to meet the most demanding monitoring requirements.

Special functions

Keyboard lock/unlock:
to prevent unauthorized operator actions

Outputs lock/unlock:
to set the outputs to OFF

Max. or Min. of PV:
to display the maximum or the minimum stored value, using the (max.) or (min.) keys.

Peak and Valley of PV:
to display the maximum and minimum read values in the following 2 modes

- 1) **Positive/Negative Hold Peak Display,**
The displayed value is updated when higher/lower peak is detected.
- 2) **Positive/Negative Timed Peak Display,**
The Peak value is displayed for a programmable period of time.

HOLD PV:
The inputs and all the other functions (alarms, retransmission, etc.) are frozen on the last value until the Hold PV is active.

Conditioned Input (CIN):
CIN is the result of IN1 conditioned by IN2.

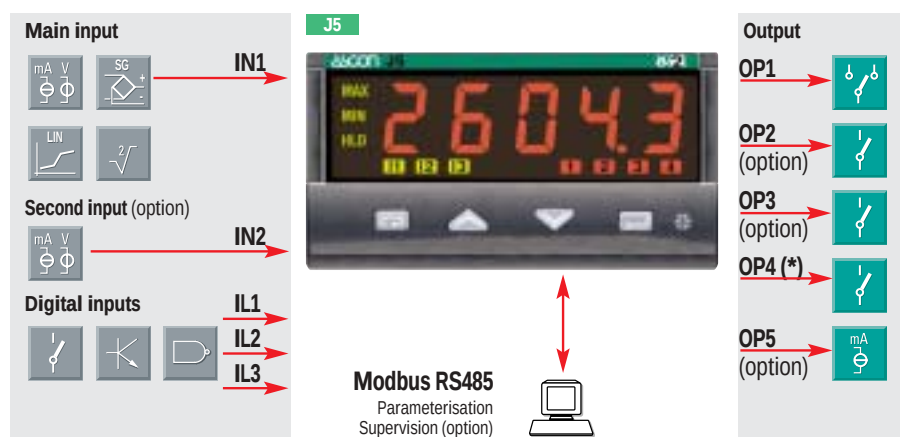
NO/NC Alarm status:
The relay contact status can be configured by default as either Normally Open (NO) or Normally Closed (NC).

Display and key functions in operator mode



- | | | | | | |
|---|-------------------|---|----|------------|---|
| 1 | MAX | Lit when the display shows the "Maximum value" | 7 | | |
| 2 | MIN | Lit when the display shows the "Minimum value" | 8 | 1, 2, 3, 4 | Alarm output status LEDs |
| 3 | HLD | Lit when the input is frozen by the HOLD command | 9 | | Alarm acknowledge, Reset Min./Max. stored values |
| 4 | IL, I2, I3 | Digital input status LEDs | 10 | | Scanning of: Main input IN1, Second input IN2, Conditioned input value CIN, Min. and Max. values of IN1 or CIN, Engineering unit, Keyboard lock |
| 5 | | Access to Parameters & Calibration menu, (password protected) | | | |
| 6 | | Displays the Minimum stored value | | | |
| | | Displays the Maximum stored value | | | |

Resources



Special Functions



Digital inputs (IL1, IL2 or IL3) functions



*** Note:** OP4 output can be used for calibration shunt when strain gauge automatic calibration is required.

Technical data

Features at 25°C env. temp.	Description				
Dual colour display	5 digit, high efficiency, height 15 mm, limits: -9999... 99999 red or green configurable depending on the user needs and/or the alarm status				
IN1 Main input (for signal ranges see “Ordering codes”)	Common characteristics	A/D converter with 16 bit resolution Overall response time: 20 ms Input shift: ±1000 digit Input filter: 1...30 s (OFF= 0)			
	Accuracy	0.1% ±1 digit; between 85...240 Vac the error is negligible			
	Strain gauge bridge excitation	5V/10V selectable	From 350Ω... 10kΩ bridge load		
	DC input Current	0/4... 20 mA	Engineering units, Floating decimal point,	Input drift: <0.1%/20°C ambient temperature	
	DC input Voltage	0...20 mV 0...1 V 0...50 mV 0...5 V 0...100 mV 0...10 V	Display resolution: 1, 2, 5, 10, 50, 100 digit selectable		
IN2 Second input (option)	DC Current	0/4... 20 mA R input = 60Ω	Accuracy 0.1% Sampling rate 250 ms		
	DC Voltage	1/0...5, 0...10 V			
Digital inputs (3 logic not isolated from internal electronics)	The voltage free contact closure enables:	Keyboard lock, Output block, Alarm acknowledge, Min./Max. reset, Measure hold, Peak or Valley hold, Display variable select, Strain gauge calibration, Tare set			
OP1 output	SPDT relay, 2A/250Vac (4A/120Vac) for resistive load				
OP2 output (opt.)	SPST relay N.O., 2A/250Vac (4A/120Vac) for resistive load				
OP3 output (opt.)	SPST relay N.O., 2A/250Vac (4A/120Vac) for resistive load				
OP4 output	SPST relay N.O., 2A/250Vac (4A/120Vac) for resistive load				
OP5 analogue output (option)	0/4...20mA, 750Ω/15V max. To retransmit: IN1, IN2 or CIN Accuracy: 0.1% Resolution: 12 bit Galvanic isolation: 500Vac/1min				
	Hysteresis				
	0.1...10.0%				
AL1 - AL2 - AL3 - AL4	Action	Active high	Action type	Changing rate threshold	0.1...5.0 digit/s
				Deviation threshold	± range
		Active low		Band threshold	0...range
				Absolute threshold	whole range
	Special functions	Strain gauge break, Acknowledge (latching), Activation inhibit (blocking), OR'ed of different sources of alarms, ISA-A acknowledge sequence for activation of visual and audible alarm			
Serial comms. (optional)					
RS485 isolated, Modbus/Jbus protocol, 1200, 2400, 4800, 9600, 19200, 36400, 56800 bit/s, 3 wire					
Auxiliary power supply					
+24Vdc ±20%, 30 mA max. for a 4... 20 mA, 2 wire transmitter					
Operational safety	Input measure	Detection of out of range, short circuit or sensor break with automatic activation of the safety strategy and alerts on display			
	Parameters	A non volatile memory stores for unlimited time all the configuration and parameter values			
	Access protection	3 password levels to access the strain gauge calibration, Configuration and Parameters data, Keyboard lock, Outputs Block			
General characteristics	Power supply	100...240Vac (-15...+10%) 50/60Hz or 24Vac (-25...+15%) 50/60Hz and 24Vdc (-15...+25%)		Power consumption 4W max (PTC protected)	
	Safety	Compliance EN61010-1 (IEC 1010-1), installation class 2 (2.5kV) pollution class 2, class II instrument			
	Electromagnetic compatibility	Compliance to the CE standards for industrial systems and equipment			
	UL & cUL approval	File E176452 (pending)			
	Protection EN60529 (IEC529)	IP65 front panel			
	Dimensions	1/8 DIN - 96 x 48, depth 110 mm, weight 250g approx.			

Measure conditioning

Primary input IN1 can be Conditioned by the secondary input IN2; the conditioned input (CIN) can be:

Id	Description
IN1	Cin = IN1
IN2	Cin = IN2
SUM	Cin = IN1 + IN2
SUB	Cin = IN1 - IN2
AVG	Cin = (IN1 + IN2)/2
HIG	Cin = MAX (IN1, IN2)
LOW	Cin = Min (IN1, IN2)
MUL	Cin = IN1 * IN2
REL	Cin = IN1/IN2

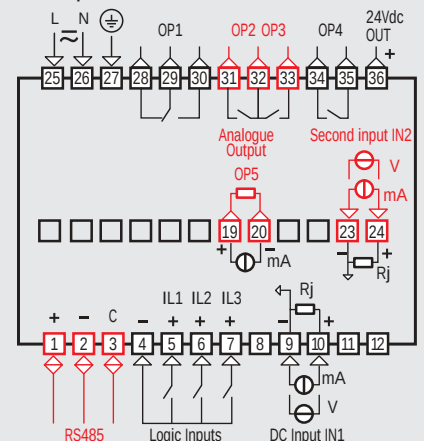
Default display variable

Variables that must be displayed as default include:

Id	Description
IN1	Input 1
IN2	Input 2
CIN	Conditioned input
LOW	Minimum stored value
HIG	Maximum stored value
UNIT	Selected engineering unit

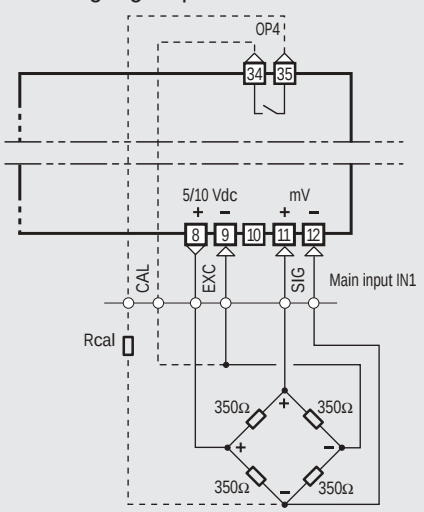
Electrical wiring

DC input IN1

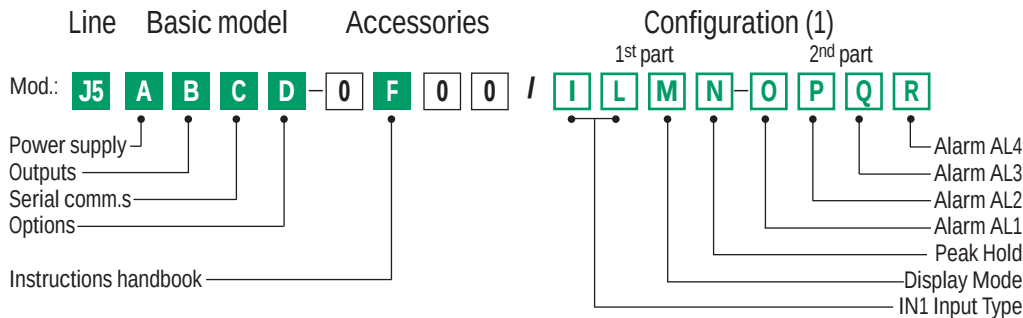


Note: Terminals in red are optional

Strain gauge input IN1



Ordering Codes



Power supply	A
100...240Vac (-15...+10%)	3
24Vac (-25...+12%) or 24Vdc (-15...+25%)	5
OP1 OP2 OP3 OP4 (2) outputs	B
Relay - - Relay	7
Relay Relay Relay Relay	9
Serial communications	C
Not fitted	0
RS 485 Modbus/Jbus SLAVE	5
Options	D
None	0
Analogue output for signal retransmission	1
Second input IN2	2
Analogue output for signal retransmission + Second input IN2	5
Instruction handbook	F
English (std)	8

Notes:

- If the configuration code is not specified, the J5 is supplied with the default configuration:
J5 _____ / 0000 - 0000.
- OP4 output can be used for high end scale calibration of the strain gauge.
- Configuration examples:
- For strain gauge transducer rated 350Ω, 3.3 mV/V, 10 V excitation Voltage, select: **I: 1, L: 2**;
- For standard transmitter 4... 20 mA output, select: **I: 8, L: 0**.

IN1 Input range	IN1 Input Type	I	L
DC input 0... 20mV	Linear	0	0
DC input 0... 50mV		1	0
DC input 0... 100mV		2	0
DC input 0... 1 V		3	0
DC input 0... 5 V		4	0
DC input 1... 5 V		5	0
DC input 0... 10 V		6	0
DC input 0... 20 mA		7	0
DC input 4... 20 mA		8	0
DC input 0... 20mV		0	1
DC input 0... 50mV	Strain gauge 5V bridge excitation	1	1
DC input 0... 100mV	Strain gauge 10V bridge excitation	2	1
DC input 0... 20mV		0	2
DC input 0... 50mV		1	2
DC input 0... 100mV		2	2

Display mode	M
Green	0
Red	1
Red when alarm 1 (AL1) active	2
Red when at least one alarm is active (OR function)	3
Alternate between IN1, IN2 and CIN value	4
Manual forced display of IN1, IN2, CIN, Lo or Hi value	5

Hold of the peak values	N
Disabled	0
Shows the Max. value (HI peak) for a programmable period of time	1
Shows the Min. value (LO peak) for a programmable period of time	2

AL1 - AL2 - AL3 - AL4 alarm type and function		O	P	Q	R	
		AL	1	2	3	4
Disabled			0			
Sensor break alarm			1			
Absolute	active high		2			
	active low		3			
Deviation	active high		4			
	active low		5			
Band	active out		6			
	active in		7			
Rate alarm (AL1 only)		8	-			

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