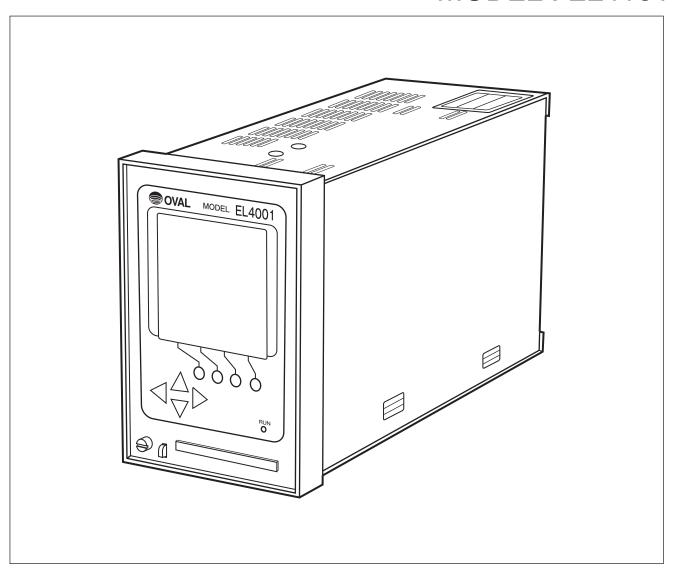


STEAM FLOW COMPUTER

(Saturated steam service)

MODEL: EL4101



This manual has been prepared to provide you with the information pertinent to the STEAM FLOW COMPUTER (saturated steam service).

With the proper application of the information and knowledge contained in this manual, you can expect the best possible results over a long service life of this instrument. Keep this manual for ready reference.

It is suggested that the instruction manuals for the companion pulse generator (flowmeter) and receiving instrument be referred to at the same time.

TABLE OF CONTENTS

1.	BEFORE YOU BEGIN	4
	1.1 Confirming the Nameplate	4
	1.2 Transportation Precautions	4
	1.3 Storage Precautions	4
2.	GENERAL	. 5
	2.1 Features	. 5
	2.2 Part Names	. 5
3.	INSTALLATION	. 6
	3.1 Outline Dimensions	. 6
	3.2 Installation	. 6
	3.2.1 Installation Location	. 6
	3.2.2 Panel	. 6
	3.2.3 Installation	. 6
4.	WIRING	7
	4.1 Field Wiring Cables	
	4.2 Wiring Connections	
	4.3 Description of Terminal Blocks for External Connections	
	GENERAL SPECIFICATIONS	
6.	INTERNAL COMPONENTS AND FUNCTIONS	
	6.1 Front Panel	
	6.1.1 Display	
	6.1.2 On-Screen Menu Items	
	6.1.3 Error Messages	
	6.1.4 Front Panel Keypad	
7.	CALCULATION FORMULAS	
	7.1 Mass Conversion (total mass flow)	
	7.2 Calorific Value Conversion (total calorific flow)	
	7.3 Instant Mass Flowrate	
8.	PREPARATIONAL CHECKS AND OPERATION	
	8.1 Preparation Before Operation	
	8.2 Preparational Checks	
	8.3 Operation	
	TROUBLESHOOTING	
	ERROR MESSAGES	
	BEHAVIOR IN ERRATIC CONDITIONS	
	OVERALL BLOCK DIAGRAM	
3.	PRODUCT CODE EXPLANATION	. 17

The indications **NOTE**, **CAUTION**, and **WARNING** shown throughout this manual are to draw your attention to specific items:

→ NOTE

Notes are separated from the general text to bring user's attention to important information.

↑ CAUTION

Caution statements call attention to user about hazards or unsafe practices that could result in minor personal injury or property damage.

MWARNING

Warning statements call attention to user about hazards or unsafe practices that could result in serious personal injury or death.

COMPANION VOLUME

KEY OPERATION MANUAL Ins. No. E-880TM-E CONTENTS

1. KEY ARRANGEMENT	10
2. DISPLAY SCREEN	11
3. INITIAL CHECK	14
4. MODE SELECTION	18
5. RUN MODE SCREEN	23
6. SET MODE	36
7. SYS MODE	142
8. EL4401	170
9. EL4501	175
10. DIP SWITCH CONFIGURATION	182

(%: Model with communication capabilities)

COMMUNICATION MANUAL (*) Ins. No. E-880CM-E CONTENTS

1. COMMONICATION CAPABILITY OVERVIEW	
2. NETWORK CONFIGURATION	5
3. MODE SELECTION	6
4. LOCAL / REMOTE SELECTION	8
5. SETUP ITEMS FOR COMMUNICATION	10
6. COMMUNICATION PROCEDURE	11
7. COMMUNICATION FORMAT	12
8. BCC / SUM CHECK	45
9. CR / LF	46
10. CODES ASSIGNED TO UNITS	48
I1. ASCII CODE	49

1. BEFORE YOU BEGIN

Every OVAL product is thoroughly tested and inspected before shipment from our factory.

When received, its appearance should be inspected for possible damage by rough handling during transit. First of all, thoroughly read the handling precautions described in this section. For topics other than those covered in this section, refer to the respective sections of this manual.

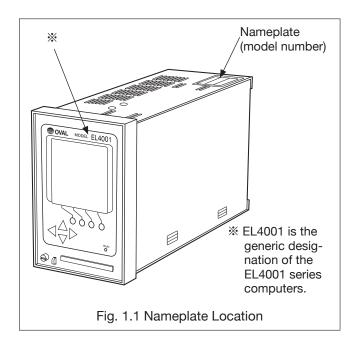
If at any time in the future you seek our assistance, contact the nearest sales office in your area.

1.1 Confirming the Nameplate

The instrument is adjusted to individual specifications before shipment from our factory. Model number appears on the nameplate attached to the top of the housing.

Make sure to see that the instrument you received conforms to the General Specifications and the Product Code Explanation.

When you make inquiries, please make sure to specify product name, meter model, serial number, operating conditions, specifications and other necessary information.



1.2 Transportation Precautions

- (1) In order to safeguard against damage during transportation, transport your instrument to the installation location in the original package used for shipment from the factory if possible.
- (2) Use care to avoid impact shocks to the instrument during transportation.

1.3 Storage Precautions

If the instrument upon receipt is to be stored for extended periods of time before installation, unexpected problems could arise. If such is the case, the following considerations should be taken:

- (1) The instrument can best be stored in the original package used for transit from the factory.
- (2) The place of storage should meet the following requirements:
 - ☆ Free from rain and water
 - ☆ Free from vibration and impact shocks
 - ☆ With minimal temperature and humidity variation (around 25°C and 65% R.H.)

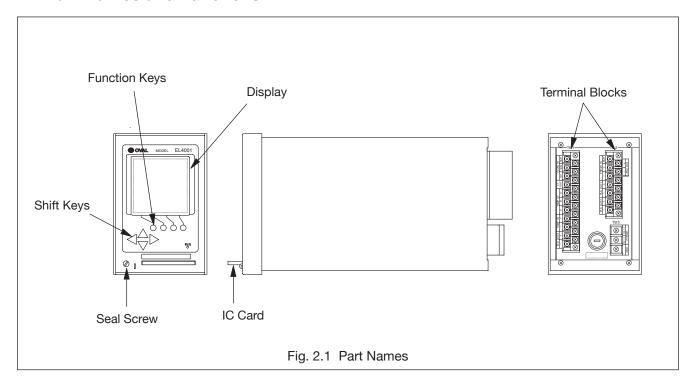
2. GENERAL

Using the most advanced electronic tehcnologies, this digital instrument has been developed specifically to meet the most demanding steam flow measurement applications where accuracy is the prime requirement. In response to flowrate and temperature information arriving from the sensing terminal, such as a delta flowmeter, it calculates "dryness factor of 1" saturated steam flow, transforms it to mass and calorie, and totalizes the flow. It also provides a totalizer pulse output and an instant flowrate analog output (mass equivalent).

2.1 Features

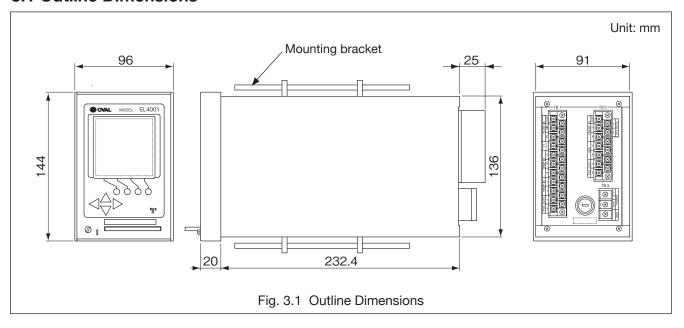
- (1) Changing the meter factor, ranges of temperature, pressure, or other parameters, of the companion flowmeter is simple by keystrokes on the front-panel keypad, or by inserting an IC card into the slot.
- (2) Built around a microprocessor, the instrument carries out calculations entirely in digital signal processing circuits to achieve a high degree of accuracy and reliability.
- (3) Variables, such as temperature and pressure, can be reviewed on command with the front panel keypad, whether or not calculation is in progress.
- (4) A nonvolatile memory (E²PROM) retains all parameters and variables. Variables are resettable following a power cycle or reset if so configured.

2.2 Part Names and Functions



3. INSTALLATION

3.1 Outline Dimensions



3.2 Installation

3.2.1 Installation Location

Select an installation site where:

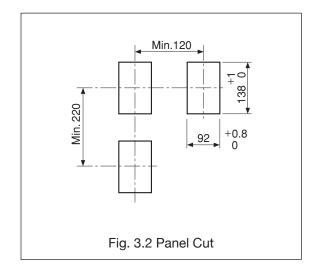
- (1) Location with least possible mechanical vibration, impact shock or corrosive gases exist.
- (2) Air is dry and temperature at stable room temperature.
- NOTE: Although the manufacturer guarantees stated performance at ambient temperatures up to +50°C, it is recommended that the instrument be placed in service at room temperature.
- (3) Provide a sufficient working space behind the instrument at least 50 centimeters from the rear panel of the instrument to facilitate wiring and servicing.

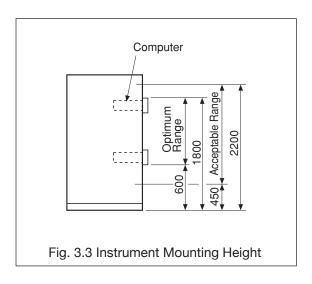
3.2.2 Panel

- (1) Use a rigid steel sheet with a minimum thickness of 1.6 millimeters. 3.2mm thick is recommended.
- (2) If it is required to install instruments alongside each other, dimensions in Fig. 3.2 are suggested.
- (3) Recommended mounting height is given in Fig. 3.3.

3.2.3 Installation

- (1) Front mount the instrument through the cutout in the panel.
- (2) Fit the furnished enclosure mounting bracket into the top and bottom slots in the enclosure and, confirming that the instrument is positioned horizontal, secure the instrument to the panel with mounting bracket (Fig. 3.1).





4. WIRING

(See the "Wiring Guidelines" in the instruction manual of the companion pulse generator.)

4.1 Field Wiring Cables

- (1) Use electrostatically shielded, polyethylene insulated, vinyl sheathed control cables (CEVS, 1.25 to 2 mm, 2-conductor or 3-conductor), or equivalent, for input signal cables from the flowmeter. For output signal cables, use insulated vinyl sheathed cables (CVV, CVS ... JIS C 3401).
- (2) Ground the end of shield wire to "G" terminal of the instrument. At the sensor end, leave the end of shield wire unconnected.

4.2 Wiring Connections

- (1) Field wiring through a conduit is recommended.
- NOTE: In routing field wiring, use a separate conduit for power cable from other signal cables to eliminate the possibility of stray current pickup.
- (2) Separate field wiring from other power lines and power circuits to minimize the possibility of inductive interference.
- (3) Using crimp-type lugs for wiring, ensure good electrical connections. Terminals are found on the back of the instrument (Fig. 4.1).

4.3 Description of Terminal Blocks for External Connections

Terminal blocks for external connections (TB1, TB2 and TB3) are found on the back of the instrument as shown in Fig. 4.1. Terminal identification appears in Table 4.1 while terminal connections appear in Table 4.2.

NOTE: TB1 and TB2 terminal numbers are indicated on the side of terminal blocks.

⚠ CAUTION

Make wiring connections upon confirmation of the validity of flowmeter (pulse generator) to receiving instrument combination by their product code number, serial number, etc.

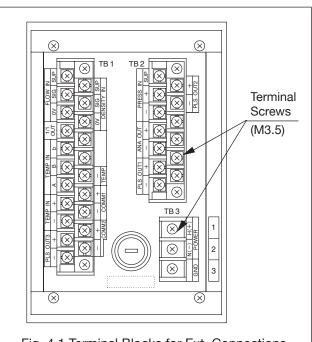


Fig. 4.1 Terminal Blocks for Ext. Connections

Table 4.1 Terminal Identification and Functions

	TB1								
1	SUP.		12						
2	SIG.	Flam:	13						
3	0V	Flow in	14						
4	OUT 1/1		15						
5			16						
6			17						
7			18	+	Comm1				
8			19	_	*				
9			20	+	Comm2				
10	+	A la	21	_	*				
11	_	Alarm out							

	TB2									
1	SUP.		8	+	Dulas sut O					
2	+	Press. in	9	-	Pulse out 2					
3	-		10							
4	+	Analagaut	11							
5	_	Analog out	12							
6	+	Dulas sut 1	13							
7	-	Pulse out 1								
				TI	33					
			1 2	H(+) N(-)	Power					
			3	GND						

NOTE:

Mode provided with communication interface.

Table 4.2 Terminal Connections

	TB1							
No	Labe	el	Description					
1		SUP.	3-wire generator					
2	Flow in	SIG.	(+)—2-wire generator					
3		0V	(–) = Output sync with					
4		OUT 1/1	(+)—— input signal (O.C.)					
5								
6								
7								
8								
9								
10	Dulas out 2	No	Alarm out					
11	Pulse out 3	polarity	Static relay					

NOTE: * Mode provided with communication interface.

	TB2						
No	Labe	·	Description				
1		SUP.	+24VDC				
2	Press. in	+	4 to 20mADC/				
3		-	— 1 to 5VDC				
4	A mala manut	+	Instant mass flowrate				
5	Analog out	_	4 to 20mADC/1 to 5VDC				
6	6 Dulas aut 1 No		Total mass flow				
7	Pulse out 1	Polarity	Static relay				
8	Pulse out 2	No	Total calorific flow				
9	Puise out 2	Polarity	Static relay				
10							
11							
12							
13							

		TE	33
No	Labe	·I	Description
1	Daywar	H(+)	85 to 264VAC
2	Power	N (-)	or 20 to 30VDC
3	Grour	nd	

Screws on the terminal block: M3.5

5. GENERAL SPECIFICATIONS

Table 5.1

Item				Description	n			
		Signal name		Pulse generator	Power to ge	enerator	Speed of response	
		Contact closure pulse		_	13.5VDC	Allowable	50Hz	
Input	Flow input	2-wire, 12VDC 3-wire Voltage pulse		-	13.5VDC	current 40mA app.		
signals		24VDC 2-wire Current pulse (4/20mA)		PA15, 25	24.0VDC	Shortcircuit protection circuit	2kHz	
		Open collector pulse		_	13.5VDC	provided		
	Pressure input	4 to 20mADC or 1 to 5\	nsmitter pow	er supply 24V	/DC, max 30r	nA		
		Total mass flow	Static re	elay Capacity	: 230VAC/34	0VDC 0.2A		
	Pulse output	Total calorific flow	Pulse w	ridth: 1ms/50r	ms			
Output	i dise odiput	Output sync with flow input signal	Open co	ollector pulse				
signals	Alarm output	Static relay Capacity: 2	30VAC/3	40VDC 0.2A				
	Analog output	Instant mass flowrate	4 to 20mADC (Max. load resistance 500Ω)					
Display ty	'ne	Display: ST display (128				(※1), (※2)		
Display ty	-	Information displayed: I			age simultane	eously		
	Total mass flow	Same as output pulse unit (kg, for example) Display capacity: 8 digits						
	Total calorific flow	Same as output pulse unit (Mcal, for example)						
	Instant mass flowrate	(kg/h, for example)						
	Pressure	To the 4th decimal place (when MPa is selected.)						
Menu	Correction factor 1	To the 5th decimal place						
items	Correction factor 2	To the 4th decimal place						
	Meter error corr. fctr.	To the 5th decimal plac						
	Meter correction fctr.	To the 5th decimal plac						
	Specific weight	To the 4th decimal place (when kg/m³ is selected.)						
	Specific enthalpy	To the 2nd decimal place (when kJ/kg is selected.)						
	Error alarm	Number of errors + erro	r messag	jes				
Comput- ing range	Pressure	0 to 3MPa Standard sp	an: 1MPa	a				
Com-	Mass flow	±0.5% of R.D.						
puting accura-	Calorific flow	±0.6% of R.D.						
СУ	Pressure	±0.1% of SPAN						
Clock IC	oattery backup	Lithium battery (Battery life: 10 years approx.)						
Communication (when com.		Interface: RS485 Multipoint (Up to 16 units can be connected.)						
interface is provided.)		Dedicated protocol Baud rate: 4800 bps standard 9600 bps max.						
Power source		85 to 264VAC, 50/60Hz or 20 to 30VDC						
Power consumption		20W max.						
	emperature	-10 to +50°C						
Mounting		Panel mount						
Finish		Munsell N1.5						
Weight		2.5 kilograms, approx.						

NOTES (**1): ST display stands for Super Twisted Nematic display.
(**2): Backlight life (luminance declined to one half its original luminance): 2500 h.

6. INTERNAL COMPONENTS AND FUNCTIONS

6.1 Front Panel

6.1.1 Display

The display is a 128×128 -dot multiple function display capable of showing the data, units of measure, error messages, and other information at the same time. (The display is backlighted.)

6.1.2 On-Screen Menu Items

The units of measurement vary with configuration. Their selection is made in the SET mode. Available menu items are:

(1) Total mass flow (TOTAL COUNT1)

Incoming flow pulses are calculated to read in mass units, integrated, and the obtained totalized mass flow is indicated on the display. Resolution, or the minimum unit of measurement, which varies with customer specifications, is set up with front-panel keys. This unit automatically becomes identical with the output pulse unit.

While the total mass flow is retained in a nonvolatile memory (E²PROM) irrespective of power cycling, it is resettable to zero following a power cycle if so configured in the SYS mode.

(2) Total calorific flow (TOTAL COUNT2)

Total flow after conversion to calorific units is indicated on the display. Other specifications remain the same as (1).

(3) Instant mass flowrate (FLOW RATE)

Instant flowrate (hourly) after conversion to weight units is indicated on the display. Resolution, or the minimum unit of measurement, varies with customer specifications.

(4) Pressure (PRESSURE)

The pressure value currently fed to the instrument is indicated. If a problem arises in the course of pressure conversion, such as out-of-scale, a default fallback value is indicated.

(5) Correction factor 1 (COMP. FACTOR1)

The value determined by correction factors and the relative density is indicated.

Correction factor 1 = Meter error correction factor \times Meter correction factor \times Relative density

(6) Correction factor 2 (COMP. FACTOR2)

The value determined by correction factors, the relative density, and specific enthalpy is indicated.

Correction factor 2 = Meter error correction factor × Meter correction factor × Relative density × Specific enthalpy

(7) Meter error correction factor (METER ERROR)

Meter error correction factor corresponding to the flow rate currently fed to the instrument is indicated.

(8) Meter correction factor (Et)

Based on the temperature information currently fed to the instrument, the meter error correction factor dependent on the volumetric expansion of meter body (3 α) is indicated.

(9) Relative density (specific weight) (SPEC. WEIGHT (SAT))

The relative density determined by the temperature and pressure values currently fed to the instrument is indicated. If a problem arises in the temperature and pressure inputs, it is calculated based on their default fallback values.

(10) Specific enthalpy (SPEC. ENTHALPY (SAT))

Similar to obtaining the relative density, the value determined by temperature and pressure is indicated. Calorific conversion is carried out based on this reading in indicated unit and the reading in (6).

Specific calorific value = Relative density×Specific enthalpy

NOTE: For more information about setup items and options, see "KEY OPERATION MANUAL".

6.1.3 Error Messages

When an erratic condition arises, an error message automatically appears on the display.

(The information represented by error messages are listed on page 15.)

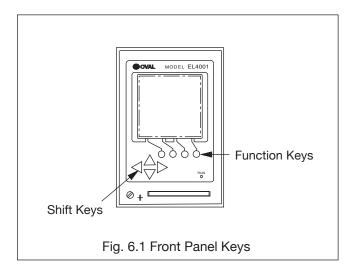
If two or more concurrent errors are involved, individual messages will be scrolled at intervals of approximately 3 seconds. When an error condition disappears, an error message automatically goes out and the normal display is resumed.

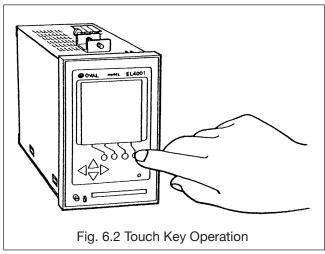
NOTE: An error logging function can store a maximum of 20 events each of which consists of year, month, day, hour and minutes of error occurrence and recovery. (Complete details are covered in the Key Operation Manual.)

6.1.4 Front Panel Keypad

The eight front panel key switches consist of two kinds of keys - functions keys and shift keys.

- Function keys: Four round keys
 Mainly used for function selection, such as activating the input conditions selected and reconfiguration.
- Shift keys: Four triangular keys
 Used for moving the cursor, moving between menu items, or changing numerical values.





7. CALCULATION FORMULAS

7.1 Conversion to Mass Units (Total mass flow)

In saturated steam calculation, the temperature and pressure fed to the instrument are used in our proprietary formula of approximation to determine specific weight V", from which conversion is performed with respect to the flow input.

$$W = a \times Ip \times V'' \times \varepsilon t \times \varepsilon p \times (1 + \frac{E}{100})$$

where W: Mass[g]

a: Meter factor of the flowmeter [I/P]

Ip: Input pulse

V": Relative density [kg/m³ = g/l]

 ϵ $_{\rm t}$: Meter's correction factor relative to temperature variation

 $\varepsilon_t = 1 + 3 \alpha (t-20)$

t = Operating temperature [°C]

 $3 \alpha = 4.8 \times 10^{-5}$ (stainless steel)

 ε p : Meter's correction factor relative to pressure variation

(ε p = always "1".)

E: Meter error correction of the flowmeter [%]

7.2 Conversion to Calorific Value (Total calorific flow)

Similar to obtaining the specific weight above, specific enthalpy h is determined and, based on mass conversion value W, calorific conversion is performed.

 $Q=W \times h$

where Q: Calorific value [J]

h: Specific enthalpy [kJ/kg]

7.3 Instant Mass Flowrate

Wm=a × f × V"×
$$\varepsilon$$
 t × ε p×[1+ $\frac{E}{100}$]×3600

where Wm: Instant mass flow [g/h]

f: Input pulse frequency [P/s]

8. PREPARATIONAL CHECKS AND OPERATION

8.1 Preparation Before Operation

(1) Ensure that the instrument and related equipment are correctly installed and wired with no place left unfinished.

MARNING: Make sure to see that the power terminals are connected to a power source of the rated voltage. Applying a power source of incorrect voltage could ruin your instrument.

(2) Supply power to this instrument and make sure that the front panel display is illuminated. The display will remain unilluminated for one second after power on, however this is no indication of a fault.

8.2 Preparational Checks

CAUTION: Allow a warmup period for 60 minutes or so after you turn on the power.

Verify if the instrument operates with no fluid flow.

How to Check

- (1) Couple sources of simulated temperature and pressure signals.
- (2) Using the shift keys, select menu items and verify the information displayed.
 - See the KEY OPERATION MANUAL.
- (3) Inject a simulated input pulse train or density signal representing the type of the companion pulse generator.
- (4) Select display menu items of the total mass flow and total calorific flow, and make sure that incoming pulses are being accumulated. Also, verify that pulse output and analog output are properly generated.
- (5) Remove the simulated pulse input and compare the obtained readings on the display with corresponding theoretical values. Remember that this instrument is not equipped with a counter to accumulate incoming pulses. Hence, an external counter is required.

8.3 Operation

⚠ CAUTION: Allow a warmup period for 60 minutes or so after you turn on the power.

(1) Select your power reset or non-reset (accumulated total) option.

See the KEY OPERATION MANUAL.

- (2) Fin on power. While the initial check screen remains displayed, indicating that the process of verifying parameters and variables is in progress after you turned on the power, your instrument will not accept any pulse input.
- (3) Place your instrument in service operation by allowing the fluid to be metered.

9. TROUBLESHOOTING

Reminder: If internal trouble is suspected, seek our service at the nearest sales office or customer service representative in your area.

Table 9.1

	Symptom	Check	Possible Causes		
Display is	dead.	Inspect fuse. Make sure of power source voltage.	 Fuse is blown. Line voltage is improper. A fault in internal assembly. 		
Error i PRE or F	ressure indication. messages ESS 1 OVER PRESS 1 UNDER me also with PRESS 2.)	Input signal line correctly wired? Input signal specifications matched? System configured correctly? Temperature range set correctly?	Input wiring is faulty. Pressure transmitter is faulty. A fault in internal assembly.		
Faulty rela	ative density and/or specific reading.	Temperature and pressure readings correct? 1. A fault in internal assembly.			
While steam is	Fails to count pulses; fails to produce a pulse output.	Input signal line correctly wired? Pulse signal coming in? Pulse generator specifications matched?	Incorrect input wiring. Pulse generator itself is faulty. A fault in internal assembly.		
allowed to flow.	Faulty total counter reading.	 Temperature and pressure readings correct? Specific weight and specific enthal- py readings correct? 	Pulse generator itself is faulty. A fault in internal assembly.		
or 4mA s (Same a or 20mA	sages NVERT ERROR SCALER 1 UNDER Iso with SCALER 2.) SCALER 1 OVER Iso with SCALER 2.)	System configured correctly? Input pulse signal correct? Flowrate full scale set properly?	1. A fault in internal assembly.		

⚠ CAUTION: Once any printed circuit board(s) of the internal assembly has been removed for servicing, do not fail to reestablish all parameters in the SET mode.

10. ERROR MESSAGES

Table 10.1 List of Error Messages

No.	Error Message	Description
1	ADJUST DATA ERROR	Adjusted allowable range check error
12	A/D CONVERT ERROR	A/D converter circuit error
13	DENSITY CONVERT ERROR	Density converter circuit error
14	TEMP 1. (PT) OVER	Temperature Pt input 1 overflow
15	TENP 1. (PT) UNDER	Temperature Pt input 1 underflow
16	TEMP 2. (PT) OVER	Temperature Pt input 2 overflow
17	TEMP 2. (PT) UNDER	Temperature Pt input 2 underflow
18	TEMP 1. (ANA) OVER	Analog temperature input 1 overflow
19	TEMP 1. (ANA) UNDER	Analog temperature input 1 underflow
20	TEMP 2. (ANA) OVER	Analog temperature input 2 overflow
21	TEMP 2. (ANA) UNDER	Analog temperature input 2 underflow
22	PRESS 1. OVER	Analog pressure input 1 overflow
23	PRESS 1. UNDER	Analog pressure input 1 underflow
24	PRESS 2. OVER	Analog pressure input 2 overflow
25	PRESS 2. UNDER	Analog pressure input 2 underflow
26	DENSITY OVER	Density input overflow (unused)
27	DENSITY UNDER	Density input underflow (unused)
28	4mA SCALER 1 UNDER	Analog output 1 underflow
29	20mA SCALER 1 OVER	Analog output 1 overflow
30	4mA SCALER 2 UNDER	Analog output 2 underflow
31	20mA SCALER 2 OVER	Analog output 2 overflow

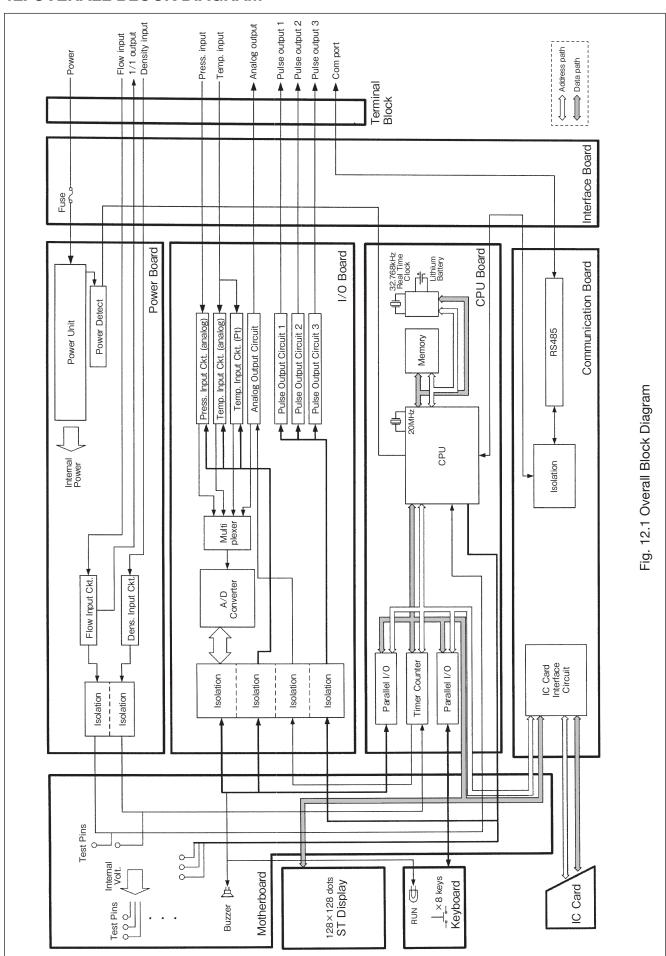
NOTE: Depending on the model in service, some of the messages are not shown.

11. BEHAVIOR IN ERRATIC CONDITIONS

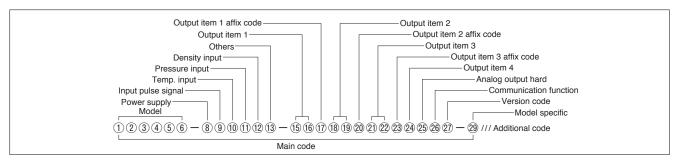
- (1) Erratic A/D Converter
 - If, following energization of A/D converter circuit, the conversion process is not completed within the specified time period, it is found that the circuit has a problem. At this point, temperature and pressure fallback values are used for calculation.
- (2) Temperature and Pressure Input Out of Range If the input exceeds the high limit or falls below the low limit, its default fallback value is used for calculation.
- (3) Analog Output Overflow

A full scale output is produced across the analog output terminals.

12. OVERALL BLOCK DIAGRAM

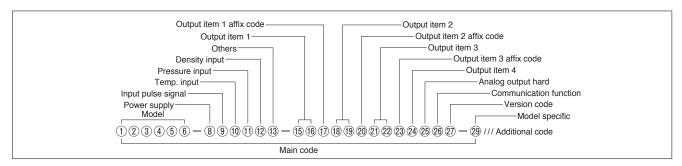


13. PRODUCT CODE EXPLANATION



•M	Main code									
1	2	3	4	(5)	6	Model				
Е	L	4	1	0	1	Steam Flow Computer (saturated steam service)				
7	-									
8	Po	Power supply								
D	20	to :	30V	DC						
J	85	to 2	264	VAC	50	DHz/60Hz				
9	Inp	out	pul	se :	sigr	nal				
В	Vo	Itag	ер	ulse	12	VDC 2 wires/3 wires				
D	Cu	ırreı	nt p	ulse	24	VDC (4/20mADC)				
G	Op	en	coll	ect	or p	oulse 12VDC 2 wires/3 wires				
K	Сс	nta	ct p	uls	e 12	2VDC 2 wires/3 wires				
Z	Sp	ecia	al							
10	Те	mp.	. in	out						
N	No	ne								
11	Pr	ess	ure	inp	out					
N	No	ne								
В	1 t	o 5'	V							
Е	4 t	o 2	0m/	4						
Z	Sp	ecia	al							
12	De	nsit	y ir	ıpu	t					
N	No	ne								
13	Ot	her	s							
N	No	ne								
14)	_									
15	16	Οι	ıtpı	ıt it	em	1				
Pu	lse	ou	tpu	t 1						
М	1	To	tal r	nas	s flo	ow/pulse width 1ms				
М	5	To	tal r	nas	s flo	ow/pulse width 50ms				
М	9	_	_			ow/pulse width special				
Н	1	_	_			flow/pulse width 1ms				
Н	5	_				flow/pulse width 50ms				
Н	9	_	_			flow/pulse width special				
A	L	_	arm		put					
Z	Z	÷	ecia		_					
17)	_		it it	em	1 a	ffix code				
N	No			:.		0				
-	_	Output item 2 Ise output 2								
$\overline{}$	_	_	_		- 61					
		-				ow/pulse width 1ms				
M	5	_				pw/pulse width 50ms				
М	9	_				pw/pulse width special				
Н	5	_				flow/pulse width 1ms flow/pulse width 50ms				
H		_				· · · · · · · · · · · · · · · · · · ·				
А	9	_				flow/pulse width special				
\vdash	L	_	arm		.put					
Z	Z	÷	ecia		2 -	ffix and				
20 N	_	·	ıt IÜ	ein	z a	ffix code				
IN	INC	ne								

21)	22	② Output item 3									
Ρι	Pulse output 3										
Α	L	L Alarm output									
Z	Z	Z Special									
23	Οι	Output item 3 affix code									
N	No	None									
24)	Output item 4										
Ar	Analog output assignment										
М	Instantaneous mass flow										
Z	Sp	Special									
25	Analog output hard										
2	1 t	o 5V									
5	4 t	4 to 20mA									
Z	Sp	Special									
26	Communication function										
Ν	No	one									
R	RS	RS-485									
2 7)	Version code										
Α	Version code: A										
28	_										
29	Model specific										
0	Standard										
Ζ	Special										



Additional code

Do	Document									
D	S	J	SPEC. & DWG (Approval Drawing) (Japanese)							
D	S	Е	SPEC. & DWG (Approval Drawing) (English)							
D	R	0	Re-submission of SPEC. & DWG							
D	С	J	Final DWG (Japanese)							
D	С	Е	Final DWG (English)							
D	W	J	Wiring diagram (Japanese)							
D	W	Е	Wiring diagram (English)							
S	D	J	Inspection report of electronics (Japanese)							
S	D	Е	Inspection report of electronics (English)							
D	Т	J	Inspection procedure (Japanese)							
D	Т	Е	Inspection procedure (English)							
С	В	J	Traceability certificate: B set Only Japanese							
Witness Test										
٧	1	1	Appearance, dimensions, quantity check							
٧	1	4	Appearance, dimensions, quantity check/performance (output confirmation, etc.)							

《PRODUCT CODE EXPLANATION OF THE OLD PRODUCT CODE》

The new product code has been implemented since April 2017.

Therefore, the product code explanation of the old product code will not be updated after April 2017.

Contact OVAL if you wish to order with the old product code for reasons such as type approval.

lt a sa	Product Code													Description			
Item	1	2	3	4	5	6) -	(7	8	9	10	(11)	12	Description			
Model	Model E L 4 1 0 1													Steam Flow Computer (saturated steam service)			
Power		6												20 to 30VDC			
Power								7						85 to 264VAC, 50/60Hz	Power consumption: 20W max.		
0														Always "0"			
Pressure Input 1 9										1				4 to 20mADC/1 to 5VDC			
										9				Other than above (special)			
Output 1											1			Mass/calorific flow pulse + instant mass flowrate analog output + alarm output			
9											9			Other than above (special)			
Communication Capability 0												0		No			
												1		Yes			
Finish 1													1	Munsell N1.5			

All specifications are subject to change without notice for improvement.

2023.04 Revised 2022.05 Revised △ 2008.08 Released E-880-5-E (2)



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