

## 7866 Digital Gas Analyzer Thermal Conductivity Single Range

## Model Selection Guide

- Utilizes thermal conductivity technology
- Measures:
  - % H<sub>2</sub> in air, N<sub>2</sub>, CO<sub>2</sub> or O<sub>2</sub>;
  - % CO<sub>2</sub> in air, N<sub>2</sub> or O<sub>2</sub>
  - % O<sub>2</sub> in hydrogen
  - % He in air
- Analyzer includes Sensor, control unit and power supply
- See Product Spec 70-82-03-46 for further details
- Optional FM and CSA Explosion Proof Approval



Control Unit



Sensor

### Instructions

- Select the desired key number. The arrow to the right marks the selection available.
- Make one selection from Tables using the column below the proper arrow.  
A dot (•) denotes unrestricted availability.

Key Number

-----	I	II	III	IV	V	VI
	VII	VIII	IX			

### KEY NUMBER

Description	Selection	Availability		
7866 Digital Thermal Conductivity Gas Analyzer consisting of: a) 07866DS2 Sensor Assembly (includes housing) b) 07866DC2 Digital Control Unit	07866D02	↓		
7866 Replacement Digital Control Unit Only	07866DC2		↓	
7866 Replacement Sensor Assembly - 2 Port	07866SS2			↓
7866 Replacement Sensor Assembly - 4 Port	07866SS4			↓

### TABLE I - SENSOR POWER SUPPLY & LINE VOLTAGE

None	0	•	•	•
Input Voltage 105 - 125 VAC, 50 - 400 Hz.	2	•	•	•
Input Voltage 210 - 250 VAC, 47 - 520 Hz.	4	•	•	•

### TABLE II - OUTPUT (PV RANGE)

None	0	•	•	•
0-20 mA	1	•	•	•
4-20 mA	2	•	•	•

TABLE III - COMMUNICATIONS	Selection	Availability			
		DO2	DC2	SS2	SS4
None	000	•	•	•	•
MODBUS RS 45	101	•	•		
10 Base-T Ethernet (Modbus RTU)	102	•	•		

**TABLE IV - BACKGROUND GAS (Note: On replacement control unit, selection must be same as selection on original unit)**

Air, N <sub>2</sub> , CO <sub>2</sub> , or O <sub>2</sub> where component being measured is % H <sub>2</sub>	1	j	j	j	j
Air, N <sub>2</sub> , or O <sub>2</sub> where component being measured is % CO <sub>2</sub>	2	k	k	k	
H <sub>2</sub> where component being measured is % O <sub>2</sub>	4	l	l	l	
Air where component being measured is % He	5	m	m		m

**TABLE V - RANGE**

**(Note: On replacement control unit chassis, selection must be the same as selection on original unit)**

When measuring % H <sub>2</sub> and CO <sub>2</sub> in Air, N <sub>2</sub> , or O <sub>2</sub> :								
	%H <sub>2</sub>	%CO <sub>2</sub>						
0-1	√		<p><b>WARNING:</b></p> <p>When measuring a flammable gas mixture that contains oxygen, the maximum oxygen concentration must not exceed 21%.</p> <p>Exceeding 21% oxygen in explosive mixtures voids all explosion proof ratings selected in Table VII.</p>	001000	c	•	•	
0-2	√			002000	c	•	•	
0-5	√			005000	c	•	•	
0-10	√	√		010000	c	•	•	
0-15	√	√		015000	c	•	•	
0-20	√	√		020000	c	•	•	
0-30	√	√		030000	c	•	•	
0-40	√	√		518000	c	•	•	
0-75	√			575000	c	•	•	
0-100	√			503000	c	•	c	
0-100	√	√		519000	c	•	•	
50-100	√			103000	h	•		•
80-100	√			080000	h	•		•
85-100	√			516000	h	•		•
90-100	√			506000	h	•		•
95-100	√			095000	h	•		•
98-100	√			098000	h	•		•
60-80	√			515000	c	•	•	
40-80	√			548000	c	•	•	
45-55	√			514000	c	•	•	
20-50	√		050000	c	•	•		
When measuring 0-100 % H <sub>2</sub> in CO <sub>2</sub>			111000	c	•	•		
When measuring 70-100 % He in Air			510000	h	•		•	
When measuring 95-100 % O <sub>2</sub> in H <sub>2</sub>			090000	c	•	•		
Special application: 0-75% dissociated ammonia			075000	c	•	c		

	Selection	Availability			
		DO2	DC2	SS2	SS4
None	0		•		
Sealed Reference - 2 Port - Explosion Proof	3	•		•	
Flowing Reference - 4 Port - Explosion Proof	7	•			•

**TABLE VII - APPROVALS**

No Approvals	0	•	•	•	•
FM and CSA Explosion Proof Sensing Unit	1	n			

**TABLE VIII - OPTIONS**

None		000	•	•	•	•
Linen Tags	15 characters maximum on each of three lines: Specify legend. One mounted on control unit; one on sensing unit	206	•	•	•	•
Stainless Steel Tags	15 characters maximum on each of three lines: Specify legend. One mounted on control unit; one on sensing unit	208	•	•	•	•

**TABLE IX - INSTRUCTION MANUALS**

CD Only (English)	0	•	•	•	•
Paper Copy: English	E	•	•	•	•

**ACCESSORY PARTS**

Description	Part Number
Instruction Manual (Paper)	78
Instruction Manual (CD)	50021805-501
Replacement Power Supply - Input Voltage 105-125VAC, 50-400 Hz	51450915-501
Replacement Power Supply - Input Voltage 210 -250VAC, 47-520 Hz	51450915-502
DIN Adaptor Plate	30755223-002

Restriction Letters	Available Only With		Not Available With	
	Table	Selection	Table	Selection
<b>c</b>	VI	3		
<b>h</b>	VI	7		
<b>j</b>			V	090000, 510000, 518000, 519000
<b>k</b>	V	010000, 015000, 020000, 030000, 518000, 519000		
<b>l</b>	V	090000		
<b>m</b>	V	510000		
<b>n</b>	V	001000, 002000 005000, 010000, 015000, 020000, 030000, 575000, 503000, 103000, 080000, 516000, 506000, 095000, 098000, 515000, 548000, 514000, 050000, 518000, 519000, 111000, 510000, 075000	V	090000

## SELECTION GUIDE (Note 1)

Single % Range	Measurement Component	Background	Background Gas Code	Range	Sensing Unit
0-1	% H <sub>2</sub>	Air or N <sub>2</sub> or O <sub>2</sub>	1	001000	3
0-2				002000	
0-5				005000	
0-10				010000	
0-15				015000	
0-20				020000	
0-30				030000	
0-75				575000	
0-100				503000	↓
50-100				103000	7
80-100				080000	7
85-100				516000	7
90-100				506000	7
95-100				095000	7
98-100				098000	7
60-80				515000	3
40-80				548000	3
45-55				514000	3
20-50				050000	3
0-10	% CO <sub>2</sub>	Air or N <sub>2</sub> or O <sub>2</sub>	2	010000	3
0-15				015000	
0-20				020000	
0-30				030000	
0-40				518000	
0-100				519000	↓
0-100	% H <sub>2</sub>	CO <sub>2</sub>	1	111000	3
70-100	% He	Air	5	510000	7
95-100	% O <sub>2</sub>	H <sub>2</sub>	4	090000	3
0-75 dissociated ammonia	% H <sub>2</sub>	N <sub>2</sub>	1	075000	3
<b>Triple Range:</b> For hydrogen cooled generator applications, See GA-21 for pricing on 7866DHH2 and GA-3 for <i>Optional</i> 7872 Sampling System.					

**NOTE:**

1. This Selection Guide is included to assist in the model selection process for 7866 Digital Thermal Conductivity Gas Analyzers.