

7866 Digital Gas Analyzer Thermal Conductivity Single Range

Model Selection Guide

- Utilizes thermal conductivity technology
- Measures:
 - % H₂ in air, N₂, CO₂ or O₂;
 - % CO₂ in air, N₂ or O₂
 - % O₂ 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 ₂ , CO ₂ , or O ₂ where component being measured is % H ₂	1	j	j	j	j
Air, N ₂ , or O ₂ where component being measured is % CO ₂	2	k	k	k	
H ₂ where component being measured is % O ₂	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 ₂ and CO ₂ in Air, N ₂ , or O ₂ :					
	%H ₂	%CO ₂			
0-1	√		<p>WARNING:</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 ₂ in CO ₂			111000	c • •	
When measuring 70-100 % He in Air			510000	h • •	
When measuring 95-100 % O ₂ in H ₂			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)	70-82-25-111
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
c	VI	3		
h	VI	7		
j			V	090000, 510000, 518000, 519000
k	V	010000, 015000, 020000, 030000, 518000, 519000		
l	V	090000		
m	V	510000		
n	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 ₂	Air or N ₂ or O ₂	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 ₂	Air or N ₂ or O ₂	2	010000	3
0-15				015000	
0-20				020000	
0-30				030000	
0-40				518000	
0-100				519000	↓
0-100	% H ₂	CO ₂	1	111000	3
70-100	% He	Air	5	510000	7
95-100	% O ₂	H ₂	4	090000	3
0-75 dissociated ammonia	% H ₂	N ₂	1	075000	3
Triple Range: 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.