

# TCM4 and TCM40 Specifications



## Parameter configuration

Type	Parameters	Units	Measuring ranges	Display ranges	TCM4	TCM40
Transcutaneous oxygen tension	tcpO <sub>2</sub>	mmHg	0-800	0-800	X	X
		kPa	0.0-99.9	0.0-99.9		
		mmHg/kPa	1-800 or 0.1-99.9	0-99 or 0.0-9.9		
- Alarm limits	High	mmHg/kPa	1-800 or 0.1-99.9			
	Low	mmHg/kPa	0-99 or 0.0-9.9			
Transcutaneous carbon dioxide tension	tcpCO <sub>2</sub>	mmHg	5-100	0-200	X	X
		kPa	0.7-13.3	0.0-26.7		
		mmHg/kPa	6-200 or 0.8-26.7	5-99 or 0.7-9.9		
- Alarm limits	High	mmHg/kPa	6-200 or 0.8-26.7			
	Low	mmHg/kPa	5-99 or 0.7-9.9			
Electrode heating	Power	mW	10-650		X	X
Oxygen saturation	SpO <sub>2</sub>	%	70-100	0-100		X
		%	21-100			
		%	20-99			
- Alarm limits	High	%	21-100			
	Low	%	20-99			
Pulse rate	Pulse	bpm	20-250	0 and 20-300		X
		bpm	35-250			
		bpm	30-245			
- Alarm limits	High	bpm	35-250			
	Low	bpm	30-245			

## Monitor data

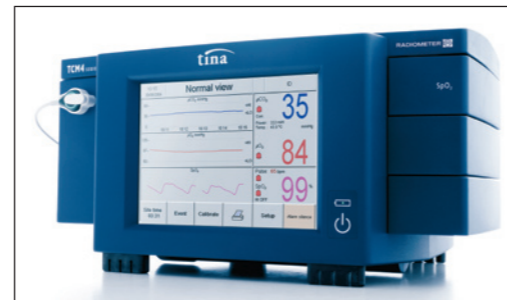
Display options	Normal view (numeric), trend table view, trend curve view
Display update	Every 2 sec
Print reports	Trend table, trend curve
Barometer	375-825 mmHg, 50-110 kPa
Calibration	1-point, 7.5 % CO <sub>2</sub> and 20.9 % O <sub>2</sub> , balance N <sub>2</sub> , 4-hour calibration interval recommended
Start-up time	Max 1 min
Time	Date, Clock
Timer	Range 0-10 hours
Power supply	100-240 V, 50-60 Hz

### Power requirements

Voltage	90-264 V AC
Frequency range	47-63 Hz
Power consumption	70 VA (max)

### Monitor battery

Type	Rechargeable Pb battery
Duty period	1 hour typical per charge at 25 °C
Recharging time	Approx. 8 hours at 25 °C



## Dimensions

Monitor and module dimensions							Electrode dimensions (E5260 and E5280)				(E5480)	
		tcpO <sub>2</sub> /tcpCO <sub>2</sub> module		SpO <sub>2</sub> module			tcpCO <sub>2</sub> and tcpO <sub>2</sub> /tcpCO <sub>2</sub>				tcpCO <sub>2</sub> /tcpO <sub>2</sub>	
Height	16 cm	6.3 in	10.7 cm	4.2 in	3.5 cm	1.4 in	Diameter					
Width	30.8 cm	12.1 in	14.5 cm	5.7 in	14.5 cm	5.7 in	Electrode housing: ø 15 mm 0.59 in				ø 15 mm 0.59 in	
Depth	23 cm	9.1 in	14.8 cm	5.8 in	14.8 cm	5.8 in	Silver body: ø 9,1 mm 0.36 in				ø 8,1 mm 0.32 in	
Weight	4 kg	8.8 lbs	0.575 kg	1.3 lbs	0.21 kg	0.5 lb	Height		11.3 mm	0.44 in	7.81mm	0.3 in
							Weight		2.9 g	0.1 oz	2.6 g	0.09 oz

## Sensor specifications

Type	Description (tcpCO <sub>2</sub> )	E5260 (tcpO <sub>2</sub> /tcpCO <sub>2</sub> )	E5280 (tcpO <sub>2</sub> /tcpCO <sub>2</sub> )	E5480 (tcpO <sub>2</sub> /tcpCO <sub>2</sub> )
O <sub>2</sub> cathode	25-µm platinum		X	X
O <sub>2</sub> anode (reference)	Silver		X	X
Measuring principle	Transcutaneous Clark-type O <sub>2</sub> electrode		X	X
CO <sub>2</sub> sensor	pH solid-state glass electrode	X	X	X
CO <sub>2</sub> anode (reference)	Silver chloride	X	X	X
Measuring principle	Stow-Severinghaus-type CO <sub>2</sub> electrode	X	X	X

### SpO<sub>2</sub> and pulse accuracy

SpO <sub>2</sub> (Accuracy over 70 % to 100 %)		
Sensor model:	Weight range:	Accuracy:
DS-100A	> 40 kg	±3 %
OXI-A/N (adults)	> 40 kg	±3 %
OXI-A/N (neonates)	< 3 kg	±4 %
OXI-P/I	3-40 kg	±3 %
Pulse	±3 bpm over 20-250 bpm range	

## Device performance

### Accuracy

tcpO <sub>2</sub>	From 0 % to 21 % within ±5 mmHg
	From 21 % to full scale within ±10 % (21 %-100 %)
tcpCO <sub>2</sub>	Within ±5 mmHg over the measurement range (5-100 mmHg)

### Drift

tcpO <sub>2</sub>	Within ±5 % over calibration interval
tcpCO <sub>2</sub>	Within ±10 % over calibration interval

### Response time (E5280, E5260)

tcpO <sub>2</sub>	18 sec (measured at 43 °C)
tcpCO <sub>2</sub>	26 sec (measured at 43 °C)

### Response time (E5480)

tcpO <sub>2</sub>	23 sec (measured at 43 °C)
tcpCO <sub>2</sub>	61 sec (measured at 43 °C)

### Electrode temperature settings

Setting	37-45 °C
Increments	0.5 °C

## IT solution

### Computer specifications

6 1/2" VGA color touch screen
AMD LX800, 500 MHz (Pentium Class)
Windows CE 5.0
128 MB RAM
48 hours' storage of data

### Interface possibilities

Serial line	EIA232
Printer output	Parallel port IEEE1284 Centronics printer port

### Analog output

	Units	Value/range
Alarm activated	mV	1000
Alarm not activated	mV	0

### Temperature

20 mV per °C	°C	10-50
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### Heat

1 mV per mW	mW	10-650
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### Tension (pO<sub>2</sub>)

5 mV per mmHg	mmHg	0-200
1 mV per mmHg	mmHg	0-800

### Tension (pCO<sub>2</sub>)

10 mV per mmHg	mmHg	0-100
5 mV per mmHg	mmHg	0-200

### Oxygen saturation (SpO<sub>2</sub>)

10 mV per % SpO <sub>2</sub>	%	0-100
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Single tcpCO<sub>2</sub> and combined tcpO<sub>2</sub>/tcpCO<sub>2</sub> electrodes.



Nellcor OxiMax SpO<sub>2</sub> finger clip sensor.



## Accessories

### E5260/E5280: Fixation rings (904-891)

Diameter	30 mm
Adhesive material	Medical-grade acrylic adhesive
Ring material	PVC
Contact solution	1.2-propanediol and deionized water

### E5480: Fixation rings (905-836)

Diameter	20 mm
Adhesive material	Medical-grade acrylic adhesive
Ring material	PETG / TPE
Contact solution	1.2-propanediol and deionized water

### E5260/E5280: Membranes (904-892)

Membrane material	PP/FEP
Electrolyte solution	1.2-propanediol, potassium chloride, sodiumhydrogen carbonate and deionized water

### E5480: Membranes (905-805)

Membrane material	PP
Electrolyte solution	1.2-propanediol, potassium chloride, sodiumhydrogen carbonate and deionized water

### Calibration gas (962-187) (US and Canada 962-188)

Components:	7.5 % CO <sub>2</sub> , 20.9 % O <sub>2</sub> , Balance N <sub>2</sub>
Contents:	1.8 L (9.7 bar) (140 psig) @ 21 °C (70 °F)

Radiometer provides an SpO<sub>2</sub> starter kit containing one of the following sensors:

- Nellcor OxiMax Durasensor DS-100A
- Nellcor OxiMax Oxiband OXI-A/N
- Nellcor OxiMax Oxiband OXI-P/I

SpO<sub>2</sub> accessories must be ordered directly from your local Nellcor agent.

Visit [www.tycohealthcare.com/international](http://www.tycohealthcare.com/international) for a full list of Nellcor agents.



Data subject to change without notice.

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## Additional information

### Patient safety

The instruments comply with IEC 60601-1:1988, IEC 60601-1-2:2001, IEC 60601-2-23:1999, IEC 60601-3-1:1996, IEC 60601-1-8:2003, ISO 9919:2005

The following test house has approved the instrument: CSA in Canada according to CAN/CSA-C22.2 No. 601.1-M90, 601.151-94, 601.1B-98, 601.2.23-98 and UL std. No. 60601-1.

Type BF equipment (body floating)



This product complies with the requirements of the Medical Device Directive 93/42/EEC June 1993

### EMC

Compliance with requirements EMC is ensured by fulfilling the requirements of the standards IEC 60601-1-2:2001, IEC 60601-2-23:1999.

### Performance

This product complies with the IEC 60601-2-23:1999, IEC 60601-3-1:1996.

### Materials

All materials are latex-free.

### Languages

English, German, Danish, French, Spanish, Portuguese, Russian, Italian, Dutch, Swedish and Japanese.

Contact information: