

TCM4 and TCM40 Specifications



Parameter configuration

Type	Parameters	Units	Measuring ranges	Display ranges	TCM4	TCM40
Transcutaneous oxygen tension	tcpO ₂	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			
		mmHg/kPa	0-99 or 0.0-9.9			
Transcutaneous carbon dioxide tension	tcpCO ₂	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			
		mmHg/kPa	5-99 or 0.7-9.9			
Electrode heating	Power	mW	10-650		X	X
Oxygen saturation	SpO ₂	%	70-100	0-100		X
- Alarm limits		High	21-100			
		Low	20-99			
Pulse rate	Pulse	bpm	20-250	0 and 20-300		X
- Alarm limits		bpm	35-250			
		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 ₂ and 20.9 % O ₂ , balance N ₂ , 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)
Monitor (incl. battery)			tcpO ₂ /tcpCO ₂ module				tcpCO ₂ and tcpO ₂ /tcpCO ₂				tcpCO ₂ /tcpO ₂
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
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
Weight	4 kg	8.8 lbs	0.575 kg	1.3 lbs	0.21 kg	0.5 lb	Height				7.81mm 0.3 in
							Weight				2.9 g 0.1 oz

Sensor specifications

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

SpO₂ and pulse accuracy

SpO ₂ (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 ₂	From 0 % to 21 % within ±5 mmHg
	From 21 % to full scale within ±10 % (21 %-100 %)
tcpCO ₂	Within ±5 mmHg over the measurement range (5-100 mmHg)

Drift

tcpO ₂	Within ±5 % over calibration interval
tcpCO ₂	Within ±10 % over calibration interval

Response time (E5280, E5260)

tcpO ₂	18 sec (measured at 43 °C)
tcpCO ₂	26 sec (measured at 43 °C)

Response time (E5480)

tcpO ₂	23 sec (measured at 43 °C)
tcpCO ₂	61 sec (measured at 43 °C)

Electrode temperature settings

Setting	37-45 °C
Increments	0.5 °C

IT solution

Computer specifications

6¼" 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
Heat		
1 mV per mW	mW	10-650

Tension (pO ₂)		
5 mV per mmHg	mmHg	0-200
1 mV per mmHg	mmHg	0-800

Tension (pCO ₂)		
10 mV per mmHg	mmHg	0-100
5 mV per mmHg	mmHg	0-200

Oxygen saturation (SpO ₂)		
10 mV per % SpO ₂	%	0-100

Single tcpCO₂ and combined tcpO₂/tcpCO₂ electrodes.



Nellcor OxiMax SpO₂ 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 ₂ , 20.9 % O ₂ , Balance N ₂
Contents:	1.8 L (9.7 bar) (140 psig) @ 21 °C (70 °F)

Radiometer provides an SpO₂ 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

SpO₂ accessories must be ordered directly from your local Nellcor agent.

Visit www.tycohealthcare.com/international for a full list of Nellcor agents.

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: