(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 28 November 2002 (28.11.2002)

PCT

(10) International Publication Number WO 02/094339 A3

(51) International Patent Classification⁷: A61B 5/02, 5/0215, G01L 19/04

McClain Way, Apt. #98, Carmichael, CA 95608 (US). **SHELL, Marc, A.**; 1508 Verbena Way, Roseville, CA 95747 (US).

(21) International Application Number: PCT/US02/12715

(74) Agents: JOY, Mark et al.; Leydig, Voit & Mayer, Ltd., Two Prudential Plaza, Suite 4900, 180 North Stetson, Chicago, IL 60601-6780 (US).

(22) International Filing Date: 22 April 2002 (22.04.2002)

(81) Designated States (national): CA, JP.

(25) Filing Language: English

(84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

(26) Publication Language: English

Published:

US

(30) Priority Data: 09/861,464 18 May 2001 (18.05.2001)

with international search report

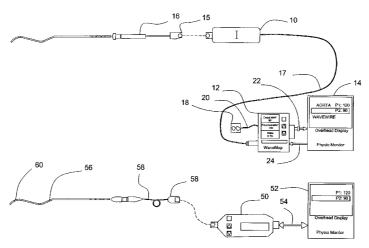
(71) Applicant: JOMED, INC. [US/US]; 2870 Kilgore Road, Rancho Cordova, CA 95670 (US).

(88) Date of publication of the international search report: 20 February 2003

(72) Inventors: DORANDO, Dale, Gene; 3521 Cothrin Ranch Road, Shingle Springs, CA 95682 (US). HOSEIT, Paul, Michael; 1765 Canberra Place, El Dorado Hills, CA 95762 (US). EBERLE, Michael, J.; P.O. Box 998, Rancho Cordova, CA 95741 (US). GABBRIELLI, Janette, D.; 4038

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SIGNAL CONDITIONING DEVICE FOR INTERFACING INTRAVASCULAR SENSORS



(57) **Abstract:** A signal conditioning device (50) interfaces a variety of sensors (60), such as guide wire-mounted pressure sensors, to physiology monitors (52). The signal conditioning device (50) includes a processor for controlling sensor excitation and signal conditioning circuitry within the signal conditioning device (50). The processor also supplies signals to an output stage on the signal conditioning device (50) representative of processed sensor signals received by a sensor interface of the signal conditioning device (50). Power for the signal conditioning device processor is supplied by an excitation signal received from a physiology monitor (52) that drives the output stage. In addition, a temperature compensating current source provides an adjustment current to at least one of a pair of resistive sensor elements (61,62) to compensate for differences between temperature change upon the sensor elements (61,62), thereby facilitating temperature effects upon the sensor elements (61,62).



WO 02/094339 A3

INTERNATIONAL SEARCH REPORT

International application No. PCT/US02/12715

A. CLASSIFICATION OF SUBJECT MATTER					
IPC(7) :A61B 5/02, 5/0215; G01L 19/04 US CL :600/486, 488, 505; 128/920; 78/708					
According t	o International Patent Classification (IPC) or to both	national classification and IPC			
B. FIELDS SEARCHED					
Minimum d	ocumentation searched (classification system followe	d by classification symbols)			
U.S. : 600/486, 488, 505, 487, 485, 485, 506; 128/920, 922; 73/708					
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched					
Electronic d	lata base consulted during the international search (name of data base and, where practicable	e, search terms used)		
EAST, sei	rach terms: pressure, blood, sensor, resistors, signal	condition, monitor, display.	·		
C. DOCUMENTS CONSIDERED TO BE RELEVANT					
Category*	Citation of document, with indication, where ap	opropriate, of the relevant passages	Relevant to claim No.		
A, P	US 6,290,652 B1 (WELLNHOFER) 1 document.	8 September 2001, see entire			
Y	US 6,106,476 A (CORL et al) 22 August 2000, see the entire document.				
Y	US 5,181,517 A (HICKEY) 26 January 1993, see Figures 6, 13 and 15 and 16 14 and col. 7, line 7 - col. 12, line 24.				
Y	WO 99/26531 A1 (WELLNHOFER) (and the English Abstract.	3 June 1999, see Figures 1-3	15 and 16		
A	US 5,460,183 A (RAYNES et al) 24 and 2 and col. 2, lines 37-62.	October 1995, see Figures 1	1-16		
X Further documents are listed in the continuation of Box C. See patent family annex.					
" Special categories of cited documents: "IT" later document published after the international filing date or priority date and not in conflict with the application but sied to understand					
"A" document defining the general state of the art which is not considered to be of particular relevance to be of particular relevance					
"L" decument which may throw doubts on priority claim(6) or which is when the decument is taken:		"X" document of particular relavance; the considered novel or cannot be consider when the document is taken alone	claimed invention cannot be ed to involve an inventive step		
"O" doc	al to establish the publication date of another citation or other cital reason (as specified) much referring to an exal disclosure, use, exhibition or other	"Y" decument of particular relevance; the considered to involve an inventive step with one or more other such documents.	when the document is combined		
obvious to a person skilled in the art "P" document published prior to the international filing date but later "F" document problem of the same petent for "In					
Date of the actual completion of the international search Date of mailing of the international search					
24 JULY 2002		05 SEP 2002			
Name and mailing address of the ISA/US		Authorized officer			
Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231		PHILIP H. LEUNG Diane Smith			
Facsimile No. (708) 305-3230		Telephone No. (709) 308-1710			

INTERNATIONAL SEARCH REPORT

International application No. PCT/US02/12715

C (Continua	tion). DOCUMENTS CONSIDERED TO BE RELEVANT	*	
Category*	Citation of document, with indication, where appropriate, of the relev	Relevant to claim No	
Y	US 5,551,801 A (COWAN) 03 September 1996, see Figures 1-3 and col. 2, line 44 - col.3, line 31.		17-20
!			
			_