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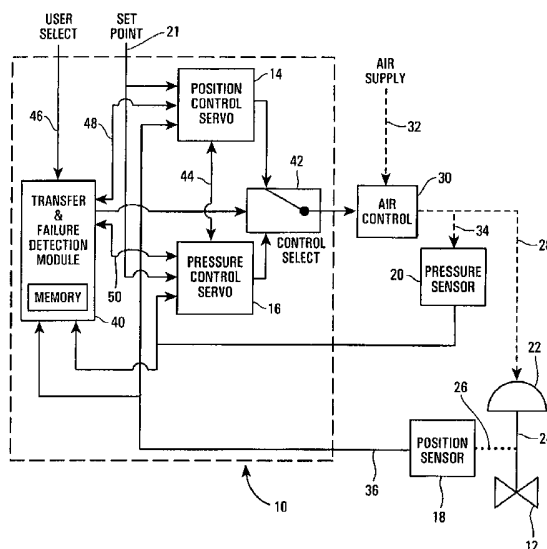
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- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
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- (88) **Date of publication of the international search report:**
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[Continued on next page]

(54) **Title:** SYSTEM AND METHOD FOR TRANSFER OF FEEDBACK CONTROL FOR A PROCESS CONTROL DEVICE



(57) **Abstract:** Disclosed herein is a controller and method useful for transferring control of a process control device between first and second control modes. The controller includes first and second servo control modules that generate first and second drive signals based on feedback information from first and second sensors for control of the process control device in accordance with first and second control modes, respectively. The controller also includes a feedback control transfer module that transfers control of the operation of the process control device from the first control mode to the second control mode based on the feedback information from the first sensor. In certain embodiments, such control transfer involves a control routine that initially generates the second drive signal based on the first drive signal to effectuate a smooth, bumpless transfer between the control modes.

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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.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2005/027754

A. CLASSIFICATION OF SUBJECT MATTER
 INV. G05B19/10 G05B7/00 G05B11/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 G05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
 EPO-Internal, WPI Data, PAJ, INSPEC, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 049 229 A (STMICROELECTRONICS S.R.L) 2 November 2000 (2000-11-02) paragraph [0003] - paragraph [0017] figure 1	1,13,25
X	WO 98/14853 A (FISHER CONTROLS INTERNATIONAL, INC; BURNS, HARRY, A; LARSON, BRENT, H;) 9 April 1998 (1998-04-09) page 27, line 26 - page 30, line 12 figures 10,11	1,2, 13-16,25
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Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family
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Date of the actual completion of the international search 18 January 2006	Date of mailing of the international search report 26. 04. 2006
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Gardella, S
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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2005/027754

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ANDERSON T ET AL: "Commissioning of static excitation on a 600 MW cross compound generator" LIFE MANAGEMENT OF POWER PLANTS, 1994., INTERNATIONAL CONFERENCE ON EDINBURGH, UK, LONDON, UK, IEE, UK, 1994, pages 236-248, XP006527402 ISBN: 0-85296-627-X page 236 -----	1,2, 13-16,25

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2005/027754

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see annex

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1,2,13-16,25

A controller which transfers control of operation from a main control mechanism to a backup control mechanism upon detection of a failure, and a corresponding control method

2. claim: 3

A two-mode controller responsive to a user command for changing the mode of operation

3. claims: 4,17-19

A valve controller with position and pressure control loops, and a corresponding control method

4. claims: 5,6

A two-mode controller with a historical log and data analysis capabilities

5. claims: 7-12,21-24,26-31

Smooth transfer of control of operation from a first control mode to a second control mode in two-mode controllers

6. claim: 20

A redundant control method with a backup control mechanism which is dormant until control of operation is transferred to it

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2005/027754

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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WO 9814853	A	09-04-1998 AU 4669397 A	24-04-1998
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