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(54) Title: ADAPTER FOR A MANIFOLD GAUGE ASSEMBLY, A MANIFOLD GAUGE ASSEMBLY, AND A METHOD OF ADAPTING A MANIFOLD GAUGE ASSEMBLY

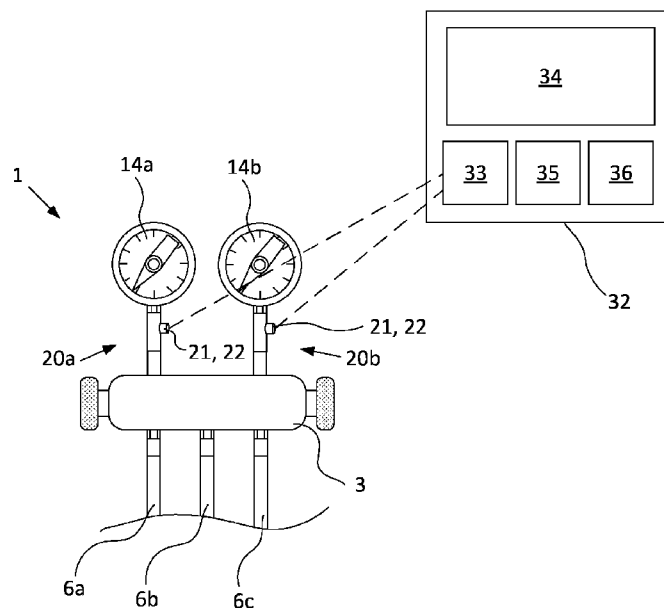


FIG. 5

(57) Abstract: The present application provides an adapter (20) for a manifold gauge assembly (1) for use on a fluid system, for example an HVAC-R system. The manifold gauge assembly (1) comprises a manifold (3) for connection to the fluid system, and a pressure gauge (14) arranged to detect a fluid pressure in the manifold (3). The adapter (20) comprises a tube (23) having connectors (27, 28) for fluidly connecting the adapter (20) to the pressure gauge (14) and to the manifold (3). The adapter also includes an electronic pressure sensor (21) arranged to detect a fluid pressure in the tube (23), and a communications unit (22) configured to receive data from the electronic pressure sensor (21) and to communicate with a remote device (32).



GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:

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INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2020/050870

A. CLASSIFICATION OF SUBJECT MATTER
 INV. F25B25/00 G01L19/00 G01L19/08
 ADD.
 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)
 F25B B60H G01L
 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 practicable, search terms used)
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2018/144274 A1 (ROSEMOUNT INC [US]) 9 August 2018 (2018-08-09) paragraphs [0017], [0018], [0025], [0040], [0041], [0044]; figures 1B, 8 -----	1-13,36
X	US 2016/003509 A1 (PISTONE KENNETH ALAN [US] ET AL) 7 January 2016 (2016-01-07) paragraphs [0018], [0050], [0051], [0055], [0058], [0069], [0071]; figures 4,5A, 5B, 6 -----	1-13,36

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 31 August 2020	Date of mailing of the international search report 30/10/2020
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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, Fax: (+31-70) 340-3016	Authorized officer Keita, Mamadou
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2020/050870

Box No. 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 No. 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 fees, this Authority did not invite payment of additional fees.

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.:

1-13(completely); 36(partially)

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-13(completely); 36(partially)

Adapter for a manifold gauge assembly

2. claims: 14-23

Manifold gauge assembly with a pressure sensor

3. claims: 24-35(completely); 36(partially)

An adapter-kit and the use thereof in a gauge manifold assembly

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2020/050870

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2018144274 A1	09-08-2018	AU 2018214815 A1	25-07-2019
		CA 3050263 A1	09-08-2018
		CN 108955988 A	07-12-2018
		EP 3577432 A1	11-12-2019
		JP 2020505593 A	20-02-2020
		US 2018223242 A1	09-08-2018
		WO 2018144274 A1	09-08-2018

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		US 2016003509 A1	07-01-2016
