Instruction

GDA, GDC, GDHC, GDHF, GDH

148R9527

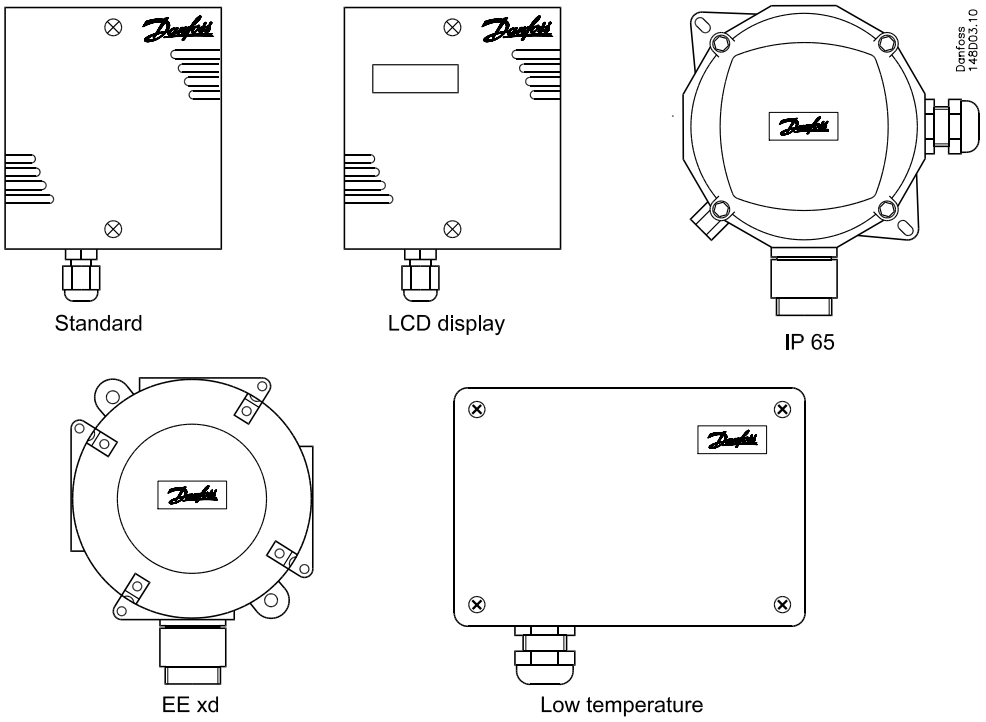

fig. 1

- **Standard**
- **LCD display**
- **Low temperature**

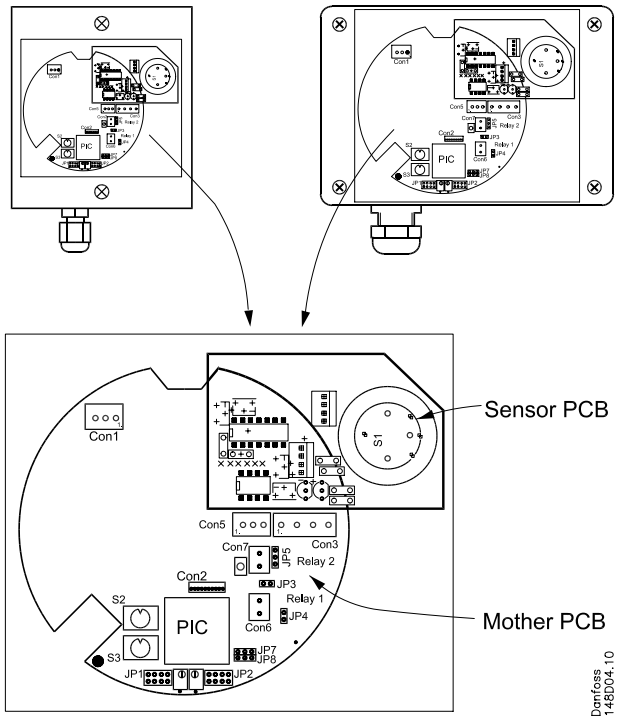

fig. 2

- **IP 65**
- **EExd**

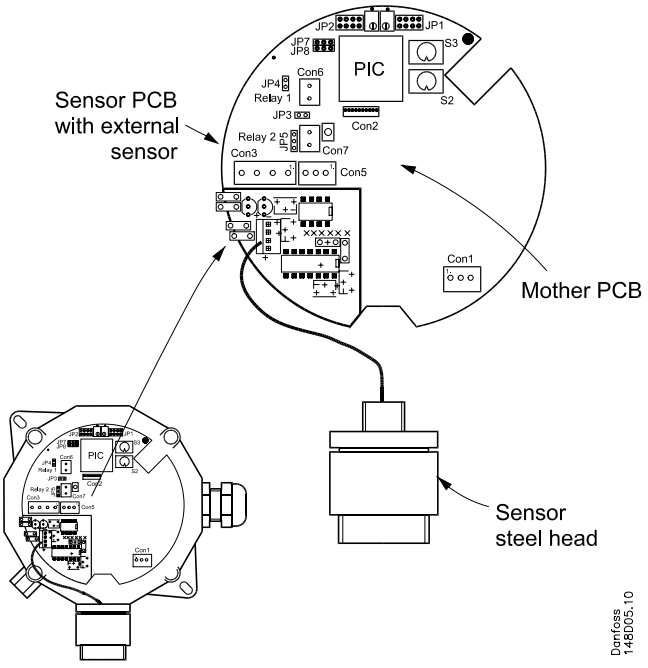

fig. 3

Electrical connection for all models

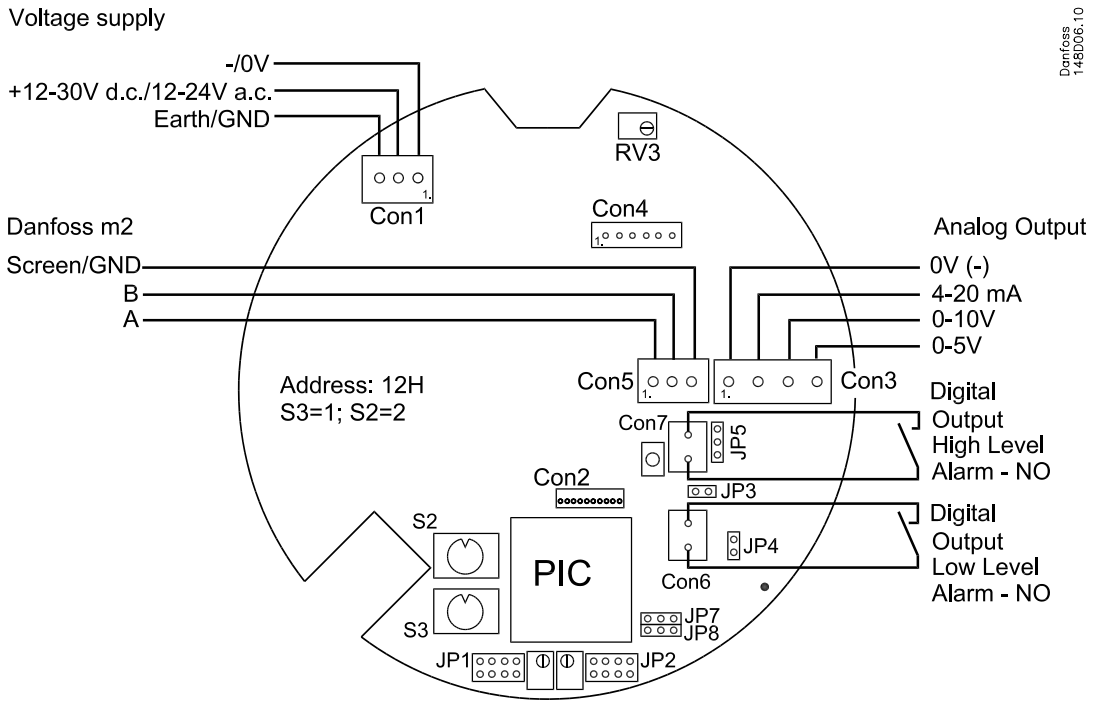

fig. 4

Jumper connection for all models

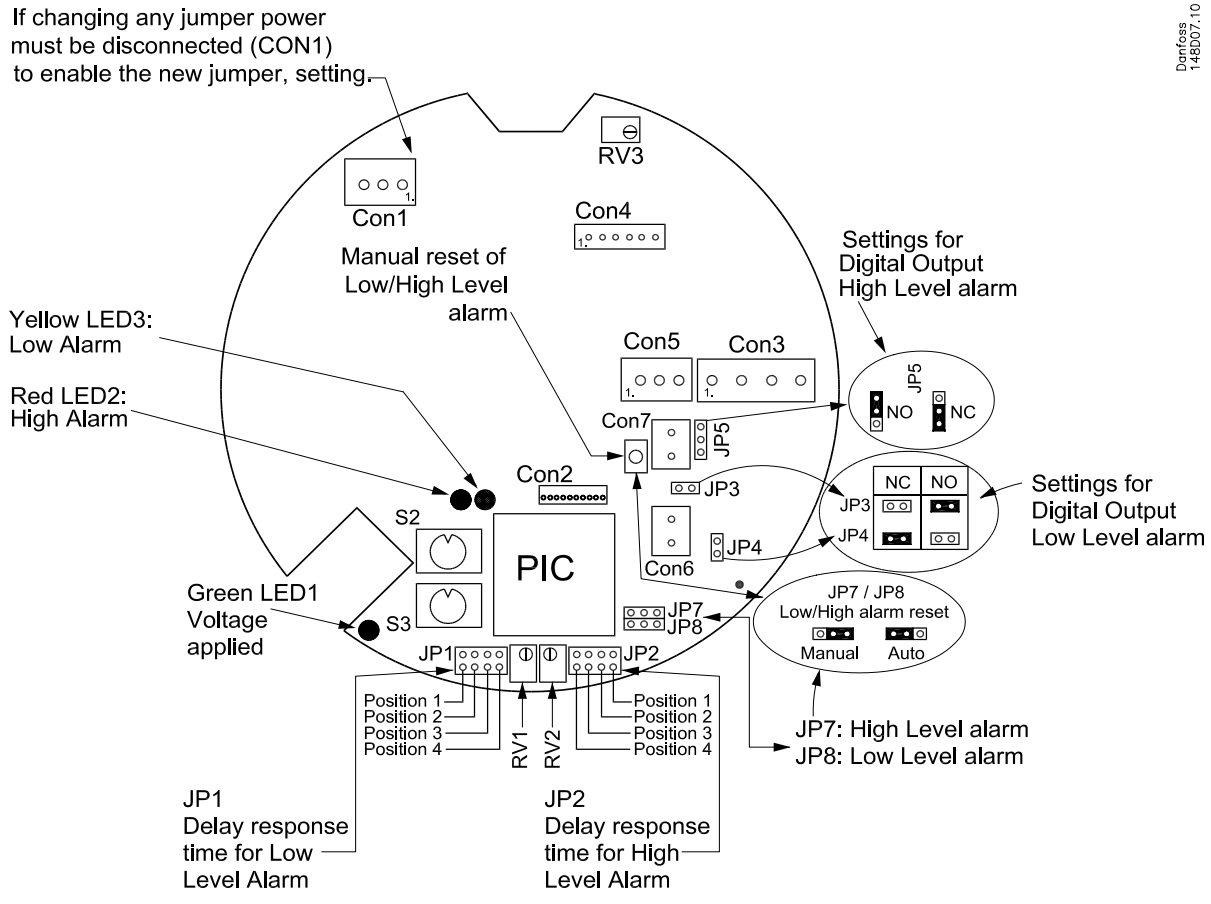

fig. 5

Adjusting low/high alarm values

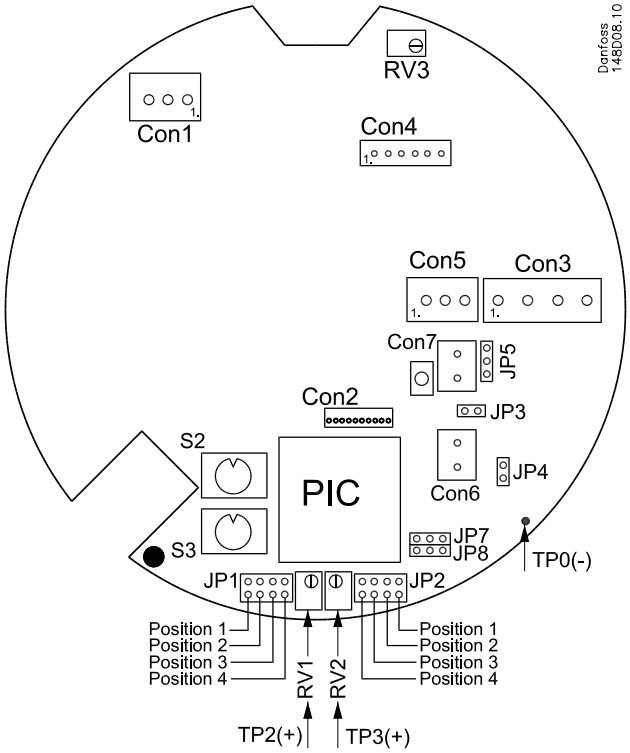

fig. 6

Setting of address when communicating to Danfoss m2

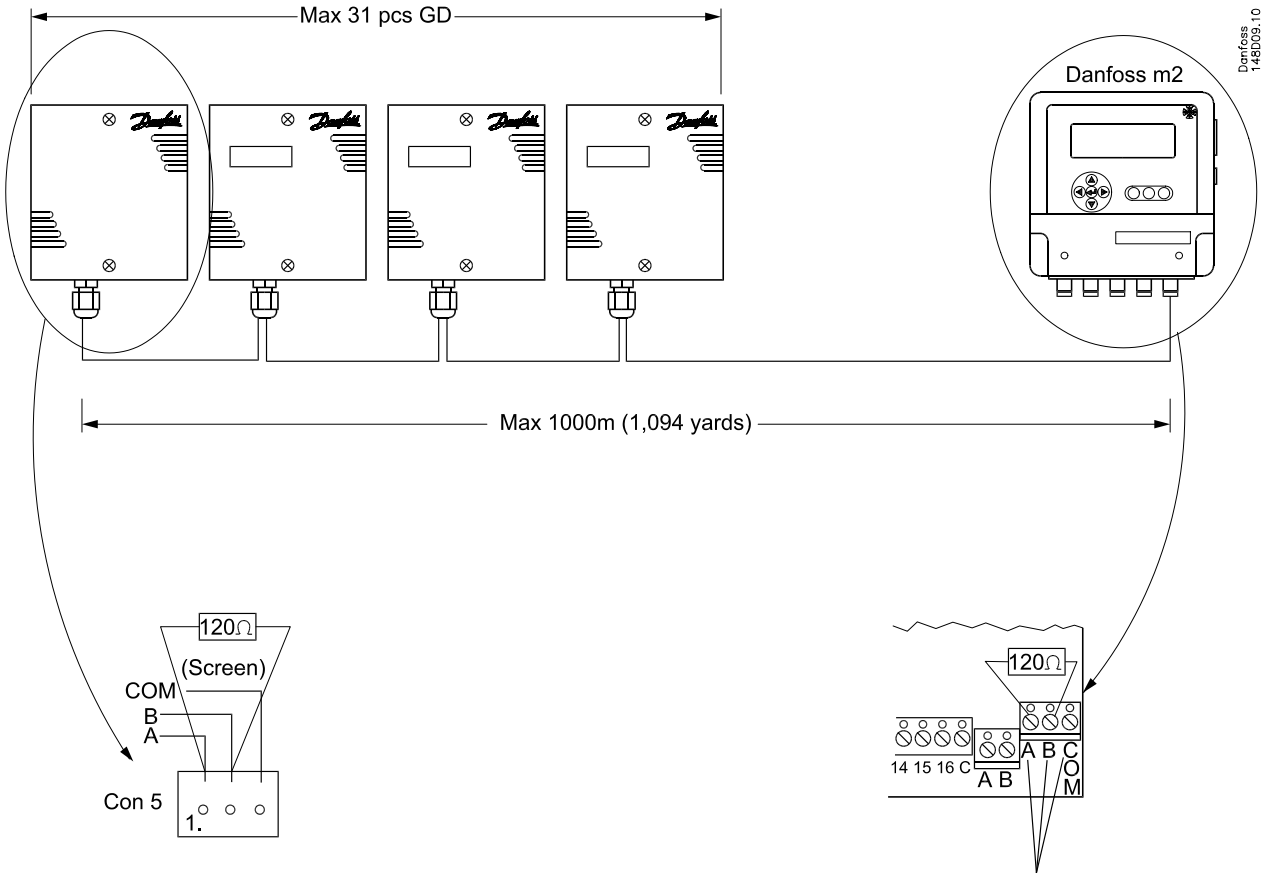

fig. 7

Setting of address when communicating to Danfoss m2 *(continued)*

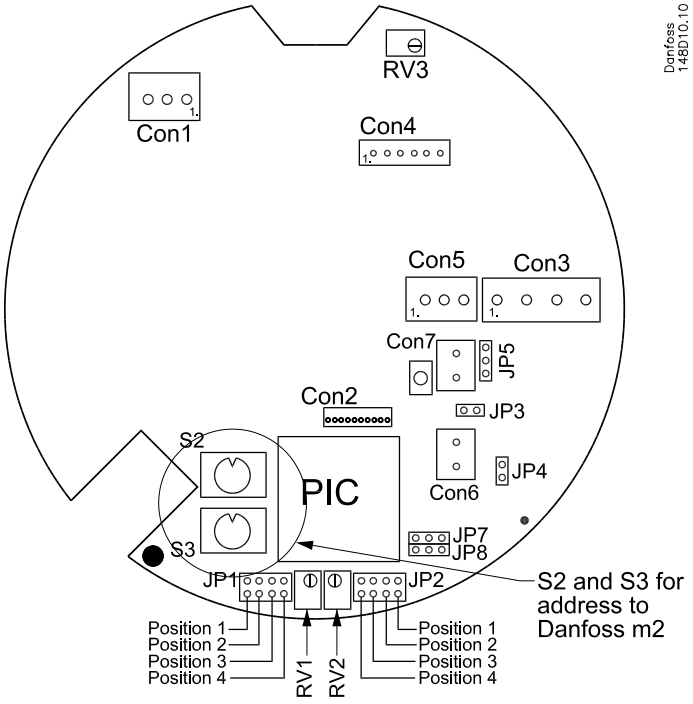

fig. 8

Channel on Danfoss m2	S3	S2	Channel on Danfoss m2	S3	S2	Channel on Danfoss m2	S3	S2
1	0	1	34	2	2	67	4	3
2	0	2	35	2	3	68	4	4
3	0	3	36	2	4	69	4	5
4	0	4	37	2	5	70	4	6
5	0	5	38	2	6	71	4	7
6	0	6	39	2	7	72	4	8
7	0	7	40	2	8	73	4	9
8	0	8	41	2	9	74	4	A
9	0	9	42	2	A	75	4	B
10	0	A	43	2	B	76	4	C
11	0	B	44	2	C	77	4	D
12	0	C	45	2	D	78	4	E
13	0	D	46	2	E	79	4	F
14	0	E	47	2	F	80	5	0
15	0	F	48	3	0	81	5	1
16	1	0	49	3	1	82	5	2
17	1	1	50	3	2	83	5	3
18	1	2	51	3	3	84	5	4
19	1	3	52	3	4	85	5	5
20	1	4	53	3	5	86	5	6
21	1	5	54	3	6	87	5	7
22	1	6	55	3	7	88	5	8
23	1	7	56	3	8	89	5	9
24	1	8	57	3	9	90	5	A
25	1	9	58	3	A	91	5	B
26	1	A	59	3	B	92	5	C
27	1	B	60	3	C	93	5	D
28	1	C	61	3	D	94	5	E
29	1	D	62	3	E	95	5	F
30	1	E	63	3	F	96	6	0
31	1	F	64	4	0	97	6	1
32	2	0	65	4	1	98	6	2
33	2	1	66	4	2	99	6	3

fig. 9

ENGLISH

Refrigerants
GD can be used for the following refrigerants

Ammonia
- Type GDA
- 0-100 ppm
- 0-1,000 ppm
- 0-10,000 ppm
- 0-30,000 ppm

Carbon Dioxide
- Type GDC
- 0-10,000 ppm

Halo-Carbon
HCFC
- Type GDHC
- 0-1,000 ppm

HFC
- Type GDHF
- 0-1,000 ppm

Hydro-carbon
Propane
- Type GDH
- 0-5,000 ppm

Temperature range
Standard, LCD display, IP 65 and EExd (fig.1):
–20°C/+50°C (–4°F/122°F)

Low temperature model:
–40°C/+50°C (–40°F/122°F)

Enclosure

Standard	IP 30 (NEMA 1)
LCD display	IP 30 (NEMA 1)
IP 65	IP 65 (NEMA 4)
EExd	IP 65 (NEMA 4)
Low temp.	IP 40 (NEMA 2)

Cable connection
1 gland for 6-13 mm cable (0.2"-0.5")
1 Ø 20 mm (0.8") hole with blanking plug.
1 extra gland can be fitted.

Electrical data
All terminals will accept 0.5-1.5 mm^2 (20-15 AWG)

Supply voltage
12- 24 V a.c
12- 30 V d.c

Analog output
4-20 mA
0-10 V
0-5 V

RS 485 Communication to Danfoss m2 monitoring unit:

Digital output - dry contacts
Load: 1 A, 24 V a.c/d.c
Low alarm level
NO (default)
NC
High alarm level
NO (default)
NC

Installation

General procedure for all types of GD products (fig. 2 and 3)

All GD products are for wall mounting.

- Remove top cover of GD.
- For the types Standard, LCD display and Low Temperature (fig. 2):
  - Unscrew two front screws (four on Low Temperature)
- For the types IP 65 and EExd (fig. 3):
  - Unscrew four front screws

Electrical installation (fig. 4 and 5)
Earth/Ground connection must be made when using the standard, LCD display, or EExd enclosure. The safety of the equipment is dependent on the integrity of the power supply and the earthing of the enclosure.

Apply voltage at CON 1 and green LED will go ON (fig. 5).

On power up the sensor may take some time (minutes up to hours) to fully normalize.

You can monitor this by checking the 0-10V output at CON 3, as it falls down towards zero.

During this normalisation period, the yellow LED3 /red LED2 can go ON to indicate Low/High Level alarms.

If changing any jumper - power must be disconnected (CON1) to enable the new jumper setting.

Setting of normally open (NO) / normally closed (NC) for the digital output Low/ High Level alarm.
Both have an option to set at NO or NC.
Factory setting is NO.

Digital output Low Level alarm
NO : JP3 ON, JP4 OFF (removed)
NC : JP4 ON, JP3 OFF (removed)
(fig. 5)

Digital output High Level alarm
NO : JP5 ON in upper position
NC : JP5 ON in lower position
(fig. 5)

Manual reset / auto reset of Low/High Level alarm (fig. 5)
Option available by means of JP8 (Low) and JP7(High)
Factory setting is Auto Reset
If manual reset is selected for either Low/ High Level alarm then manual reset is by push button located next to CON 7.

Digital output Low Level alarm
Auto Reset : JP8 in left hand position
Manual: JP8 in right hand position

Digital output High Level alarm
Auto Reset : JP7 in left hand position
Manual: JP7 in right hand position

Adjusting delayed response time (fig. 5)
Digital output for Low/High Level can be delayed.

Factory setting is 0 Minutes
(GDHC and GDHF is 300 sec.)
Digital output Low Level alarm
JP1 in position
1 : 0 minutes
2 : 1 minutes
3 : 5 minutes
4 : 10 minutes

Digital output High Level alarm
JP2 in position
1 : 0 minutes
2 : 1 minutes
3 : 5 minutes
4 : 10 minutes

Adjusting Low/High alarm values (fig. 6)
All GD have been preset by the factory to realistic values related to the actual ppm range of the GD product. The actual Low and High alarm ppm limits are detailed on the external GD label. The factory preset value can be adjusted, with a voltmeter measuring the 0-5 V d.c output.
0 V corresponds to the min. ppm range (e.g. 0 ppm)
5 V corresponds to the max. ppm range (e.g. 1000)
E.g. if a setting of 350 ppm is required then the voltage shall be set to 1.75 V (35 % of 5 V)

Adjusting the Low alarm limit value
Between TP0(-) and TP2(+) a voltage between 0-5 V can be measured and with that the ppm Low alarm limit setting.
The voltage/ppm setting can be adjusted at RV1.

Adjusting the High alarm limit value
Between TP0(-) and TP3(+) a voltage between 0-5 V can be measured and with that the ppm High alarm limit setting.
The voltage/ppm setting can be adjusted at RV2.

Connecting GD to a Danfoss m2 (fig. 7 and 8)
Wiring (fig. 7)
All GD must be connected
A-A
B-B
COM – COM (screen)
When connecting to the m2 panel the same terminals are connected to each other i.e. A-A, B-B, Com – Com.

On the last GD and Danfoss m2, fit a 120 ohm resistor across terminal A and B to terminate the communications system.

Max. 31 gas detection sensors can be connected.
If more than 31 units are needed, please contact Danfoss for further information.

GD address (fig. 8)
The sensor address is set by S2 and S3, adjusting these dials between 0 and F will give the sensor its own address as shown in fig. 8. A conversion chart between m2 channel numbers and the hexadecimal address of the ST-IAM 2 is attached. Power must be removed when setting addresses on the GD.