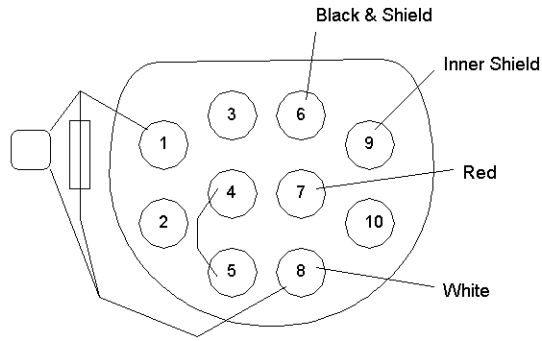
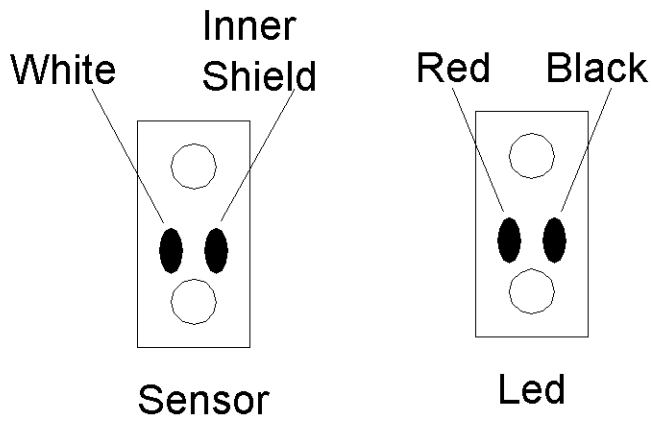
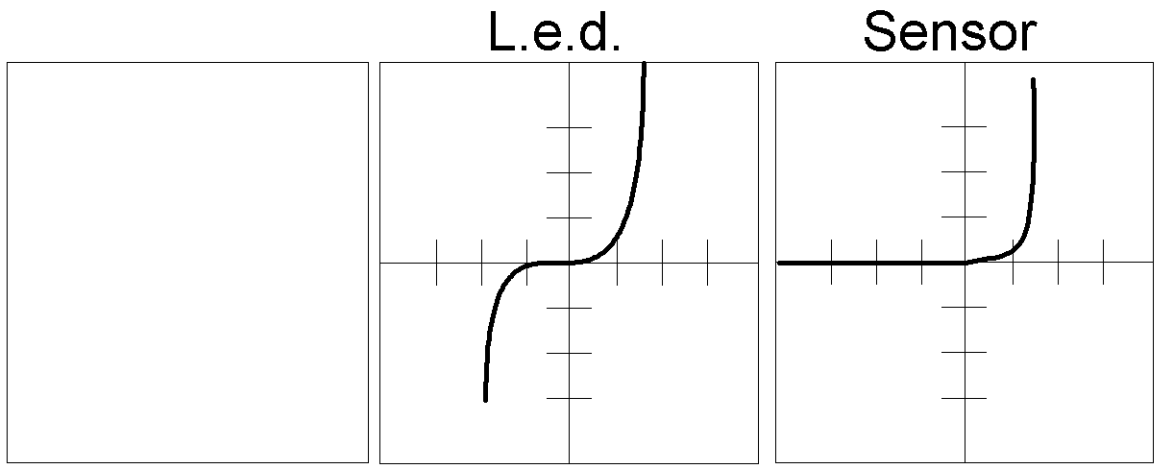
Date	01/04/97	Type	Datex Original (OLD)
Datex1.cmx			



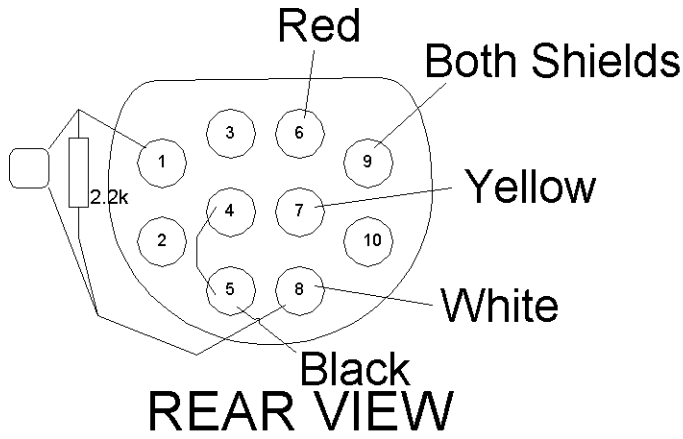
REAR VIEW





Drawn By:		Signed	

Date	01/04/97	Type	Datex Original (Very OLD) Dog House
Datex3.cmx			



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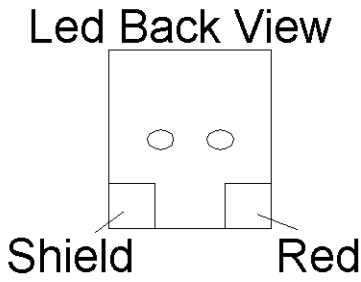
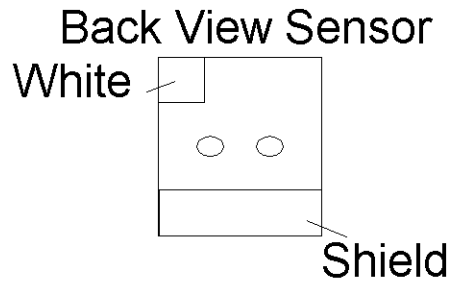
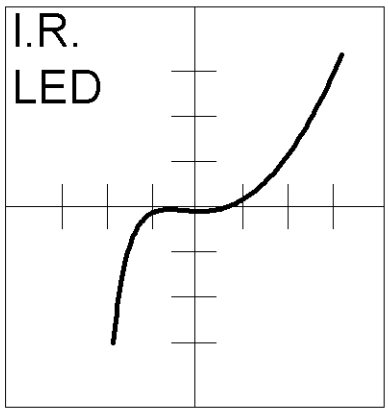
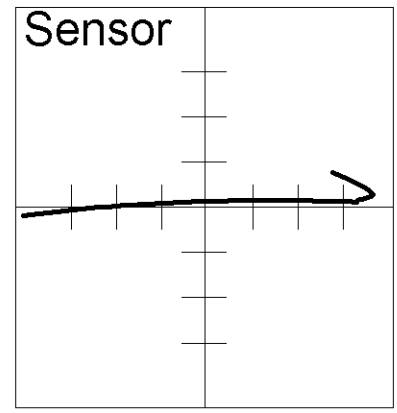
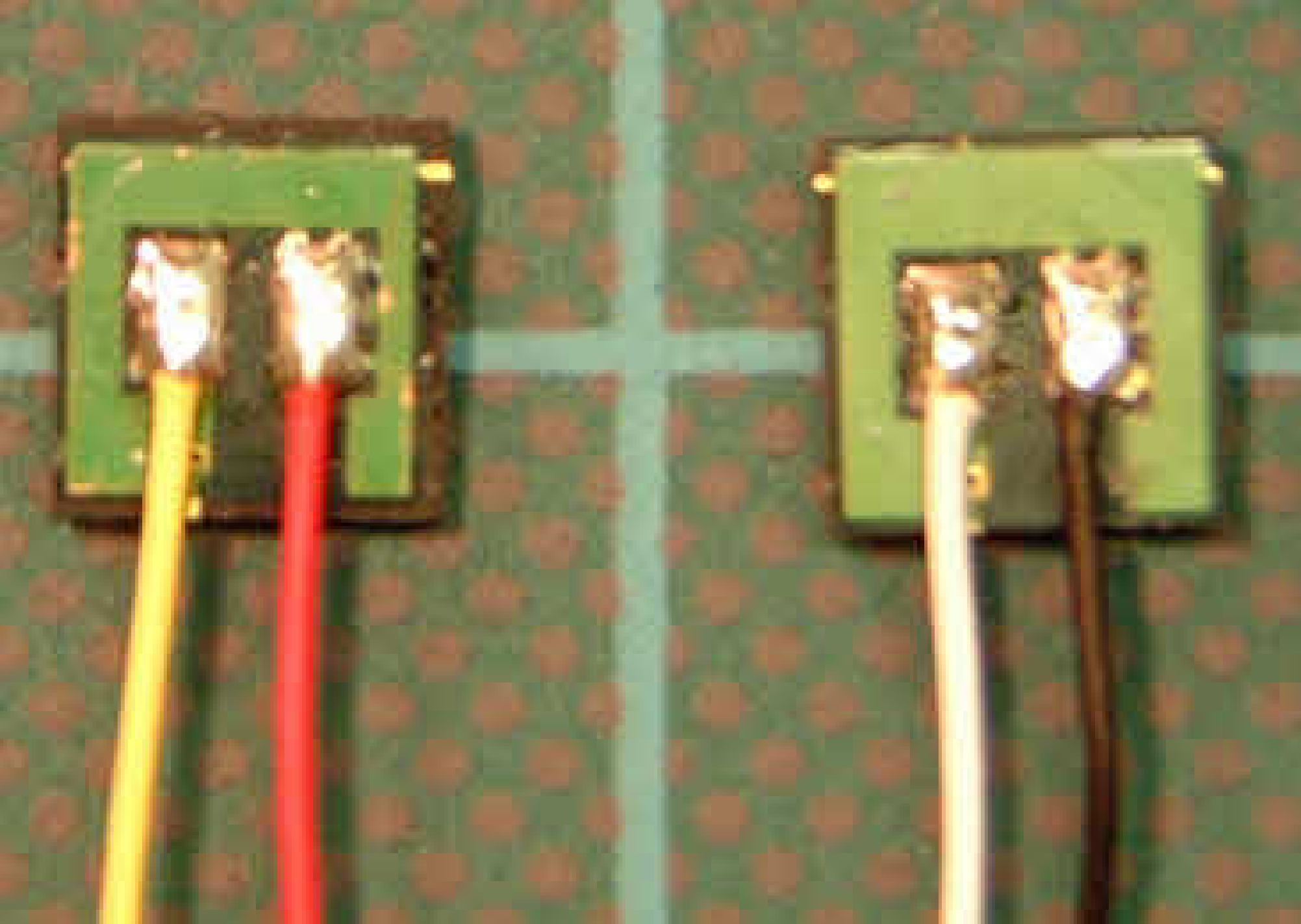








Drawn By:		Signed	



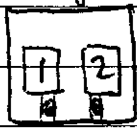
21 7 00

GB

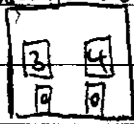
New Short Datex

	Original Cable	Vianed Cable
Detector face down	1 White	1 White
	2 Green	2 Black
	3 Red	3 Red
Emitter face down	4 Black	4 Yellow

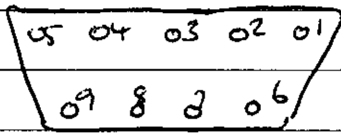
Detector face down



Emitter face down

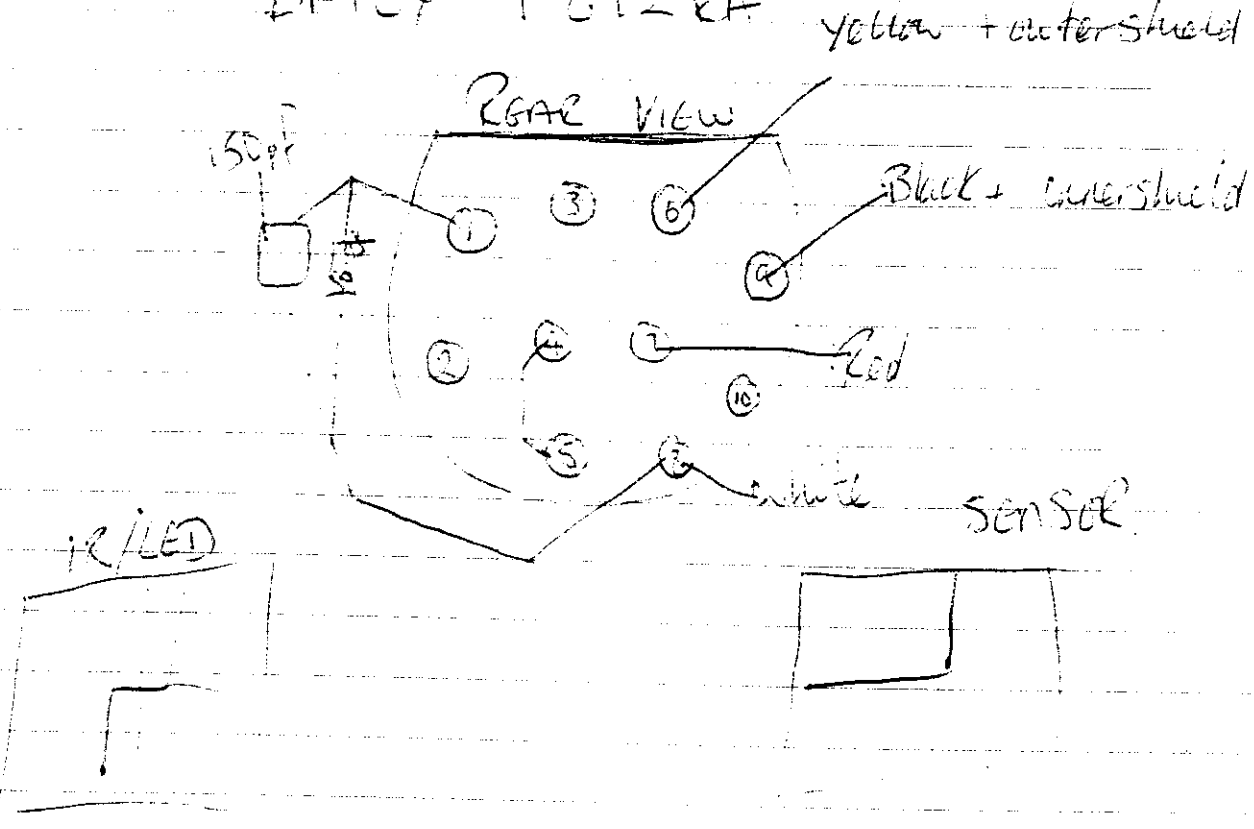


RV



Original Cable	Vianed Cable
1 link to 6	1 link to 6
2 n/c	2 n/c
3 Red	3 Red
4 n/c	4 n/c
5 White	5 White
6 link to 1	6 link to 1
7 Black	7 Yellow
8 Inner Shield	8 Innershield
9 Green	9 Black

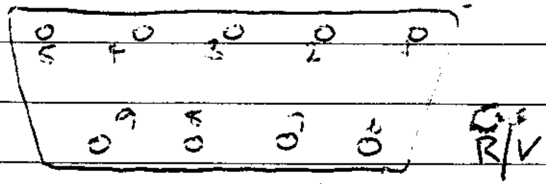
DATEY P272 RA



N/C Blue + orange are cut off

Dolan
Short probe
21-1-02
DVS

USING Viamed replacement cable

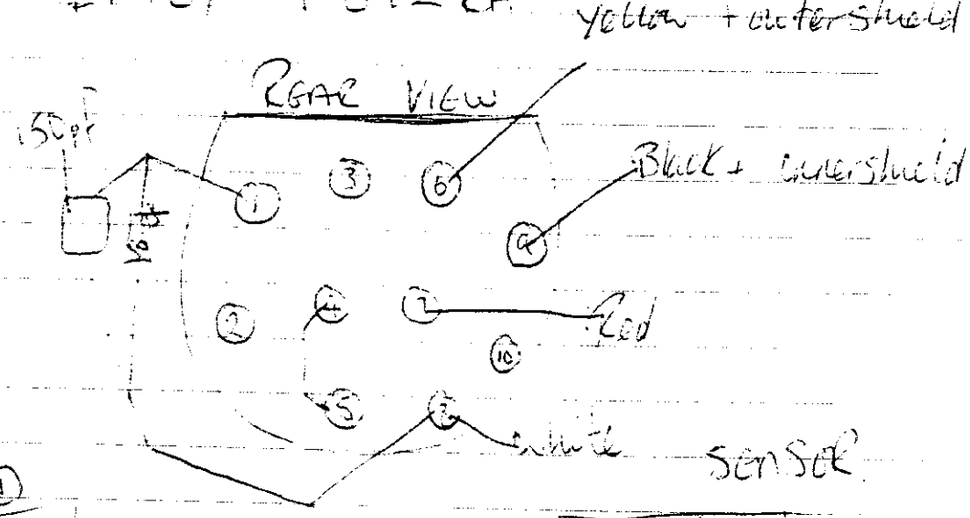


1 Link
2 N/C
3 Yellow (LED)
4 C1 + R1
5 C1 + R1 + White (sensor)
6 Link
7 Red + main shield (LED)
8 N/C
9 Inner shield + black

used per original probe (PS)3

NB. This is also the wiring of a batch of 10 MC-P873-CAB equivalent service cables, made on 2-2-02 · DVS

DATEX P272 RA

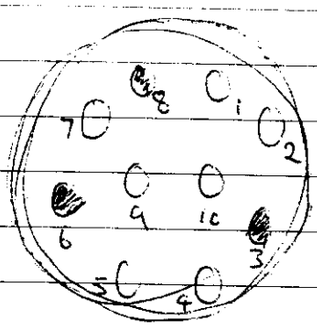


N/S Blue + orange are cut off

DATE: REPAIR

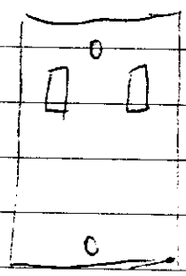
Connector END.

1/ Yellow + main shield
2/ Black + inner shield.
3/ N/C
4/ White + res + cap.
5/ Link

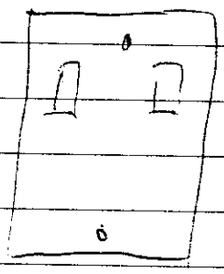


6/ N/C
7/ Resistor + Cap
8/ N/C
9/ Link
10/ RED.

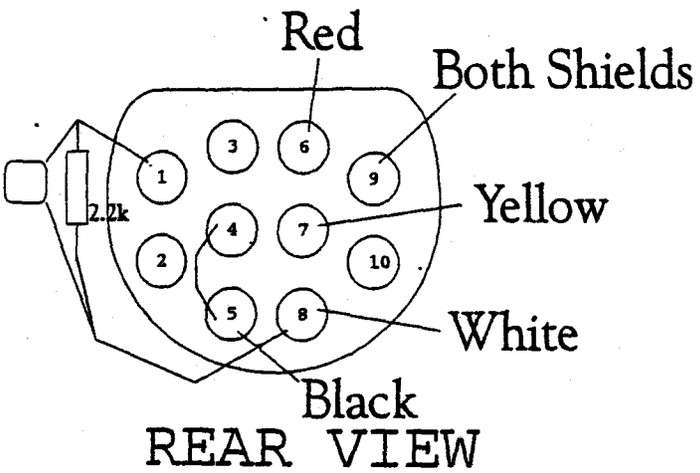
L.E.D.

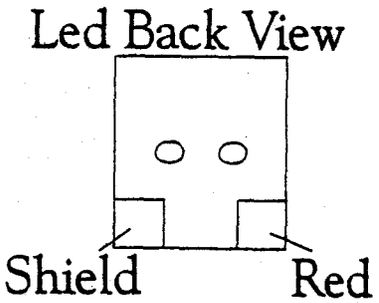


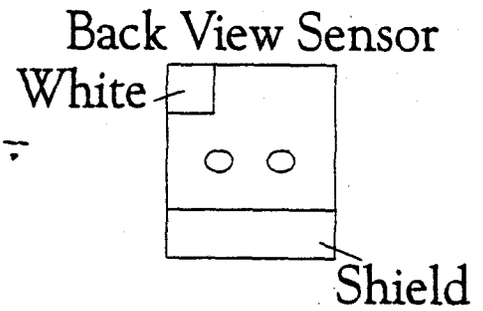
SENSOR

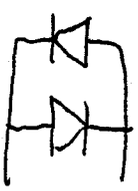


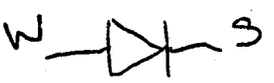
Date	01/04/97	Type	Datex Original (Very OLD) Dog House
Datex3.cmx			

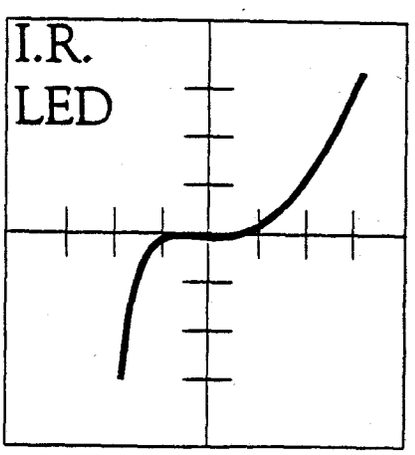


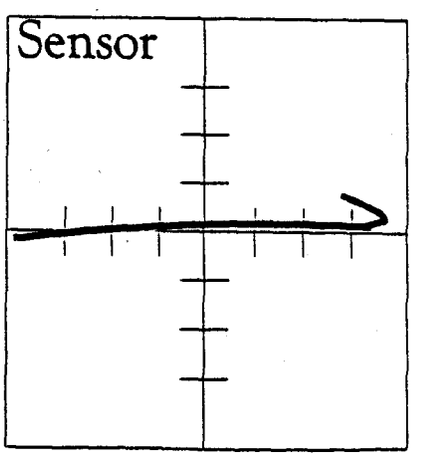






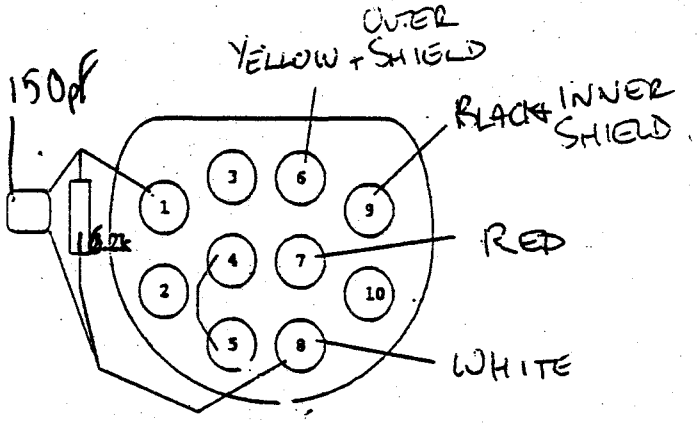




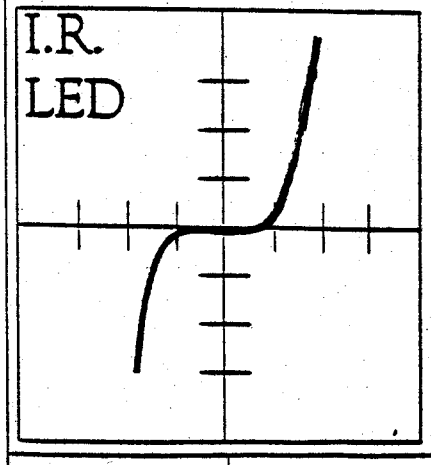


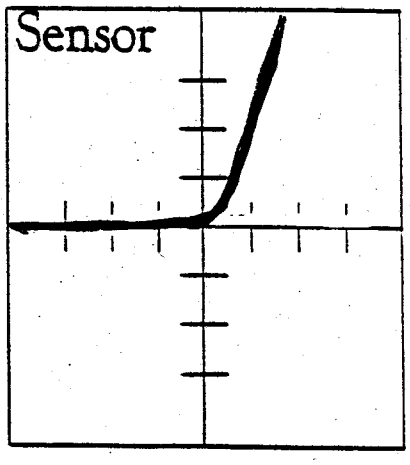
Drawn By:		Signed	

Date	01/04/97	Type	P872RA
Datex3.cmx			



REAR VIEW

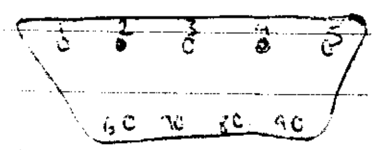




Drawn By:		Signed	

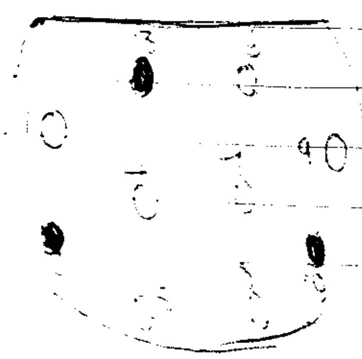
P 9713EIC EXTENSION CABLES. (DATEX) 3.7.00

female

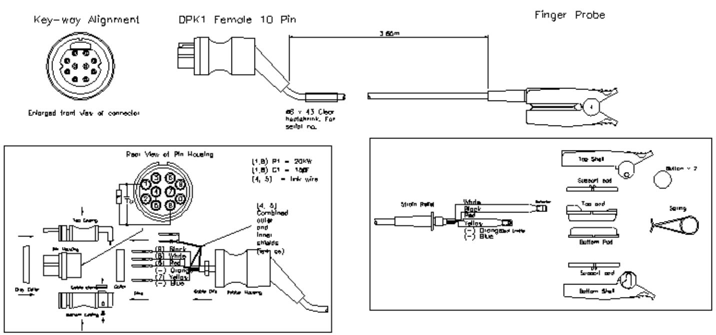


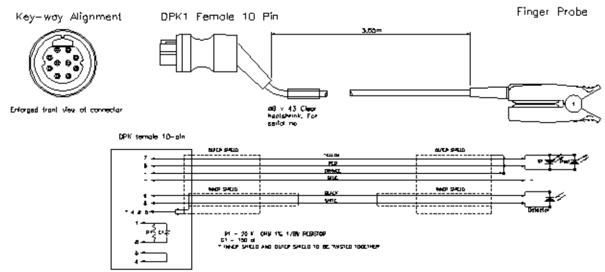
1, Blue
2, N/C
3, Yellow
4, N/C
5, white
6 orange
7 red
8 ~~orange~~ main shield
9, main shield + Black

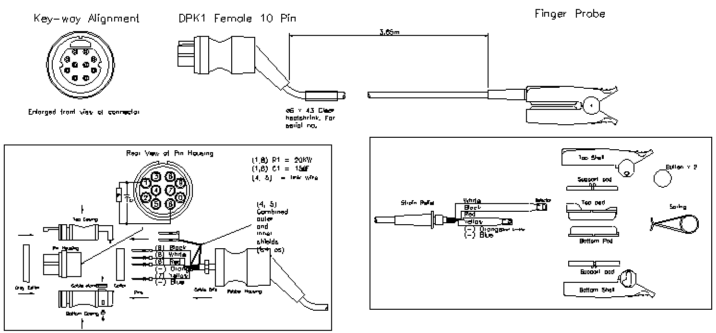
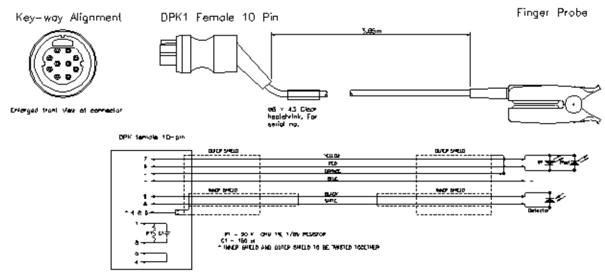
male



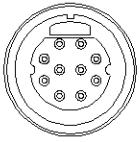
1, 20k res + 150pf cap
2, N/C
3, N/C
4 orange
5. main shield + Blue
6 red
7, yellow
8. white + res + cap
9, over shield + Black
10 / N/C


Key-way Alignment
DPK1 Female 10 Pin
Finger Probe
3.66m
Enlarged front view of connector
ø8 x 43 Clear heatshrink. For serial no.
Rear View of Pin Housing
(4, 5) Combined outer and inner shields
(8) Black
(6) White
(5) Red
(-) Orange
(7) Yellow
(-) Blue
Strain Relief
White
Black
Red
Yellow
Orange
Blue
Top Shell
Support pad
Top pad
Bottom Pad
Support pad
Bottom Shell
Button x 2
Spring


Key-way Alignment
DPK1 Female 10 Pin
Finger Probe
3.66m
Enlarged front view of connector
ø8 x 43 Clear heatshrink. For serial no.
DPK female 10-pin
Detector

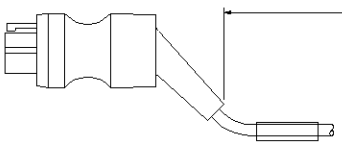

Key-way Alignment
DPK1 Female 10 Pin
Finger Probe
3.65m
Enlarged front view of connector
ø6 x 43 Clear heatshrink. For serial no.
Rear View of Pin Housing
(1,8) R1 = 20KW
(1,8) C1 = 15nF
(4, 5) = link wire
(4, 5) Combined outer and inner shields
Top Casing
Pin Housing
Bottom Casing
Cable Clamp
Collar
Pins
Cable Grip
Rubber Housing
(8) Black
(6) White
(9) Red
(-) Orange
(7) Yellow
(-) Blue
Strain Relief
White
Black
Red
Yellow
(-) Orange
(-) Blue
Detector
Top Shell
Button x 2
Support pad
Top pad
Spring
Bottom Pad
Support pad
Bottom Shell

Key-way Alignment
DPK1 Female 10 Pin
Finger Probe
3.65m
Enlarged front view of connector
ø6 x 43 Clear heatshrink. For serial no.
DPK female 10-pin
OUTER SHIELD
YELLOW
RED
ORANGE
BLUE
INNER SHIELD
BLACK
WHITE
Detector

Key-way Alignment



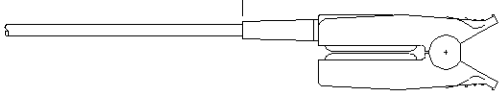
Enlarged front view of connector

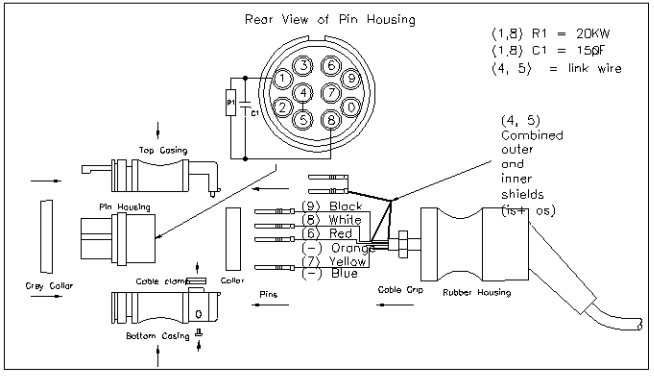
DPK1 Female 10 Pin

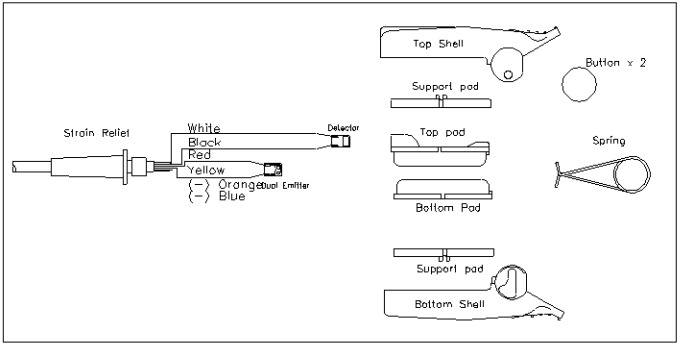


ø6 x 43 Clear heatshrink. For serial no.

Finger Probe





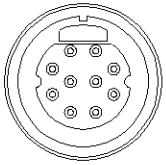


					Material :
REV	Date	N°	Drawn	Approv	Part No. 0018720

Title	P872RA Datex		
		Dim in	mm
		Tol	± 0.2
Scale	Not To Scale	Drawn	J.Nirwan
Date	30/01/02	Dwg No.	SPF-872

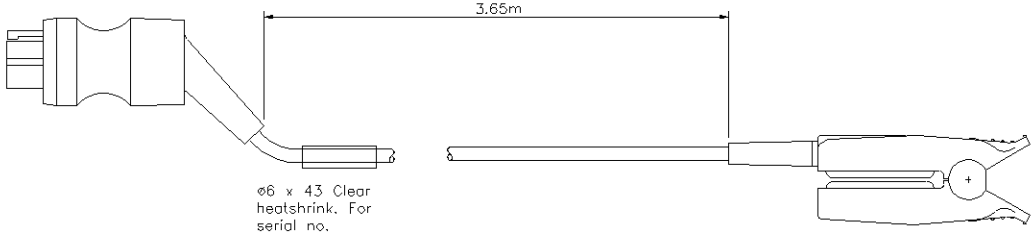
VIAMED Ltd.
15 Station Rd
Cross Hills, Keighley
West Yorkshire
BD20 7DT

Key-way Alignment



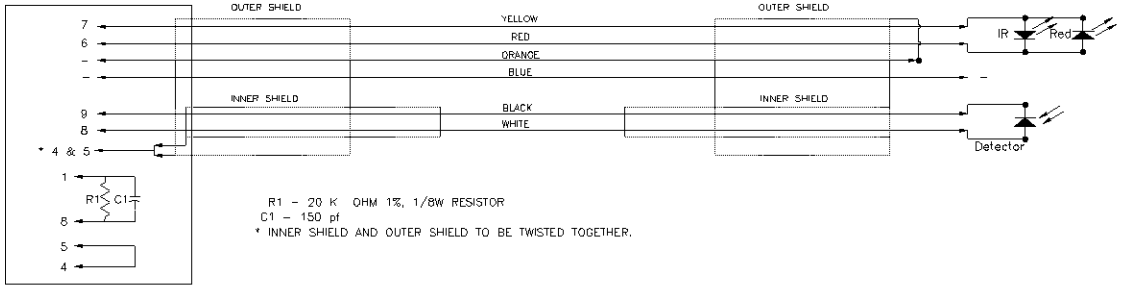
Enlarged front view of connector

DPK1 Female 10 Pin



Finger Probe

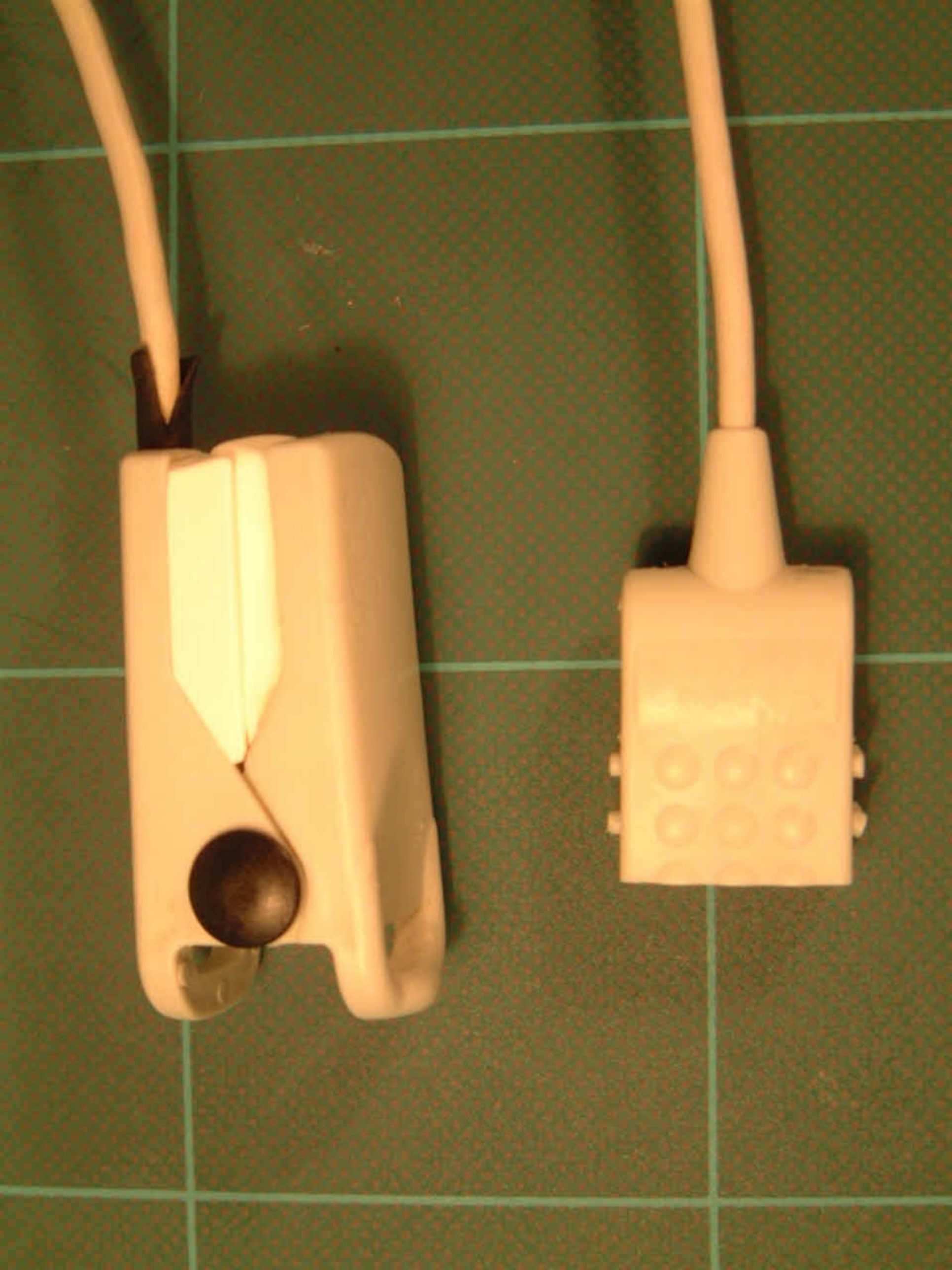
DPK female 10-pin



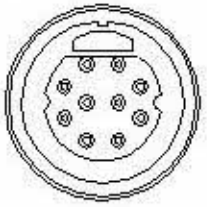
R1 - 20 K OHM 1%, 1/8W RESISTOR
C1 - 150 pf
* INNER SHIELD AND OUTER SHIELD TO BE TWISTED TOGETHER.

					Material :	Title	P872RA Datex	Dim in	mm
								Tol	± 0.2
						Scale	Not To Scale	Drawn	J.Nirwan
REV	Date	N°	Drawn	Approv	Part No. 0018720	Date	18/02/03	Dwg No.	SPF-872.1

VIAMED Ltd.
15 Station Rd
Cross Hills, Keighley
West Yorkshire
BD20 7DT

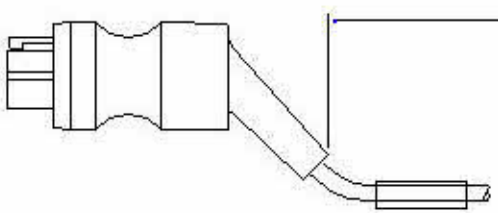


Key-way Alignment

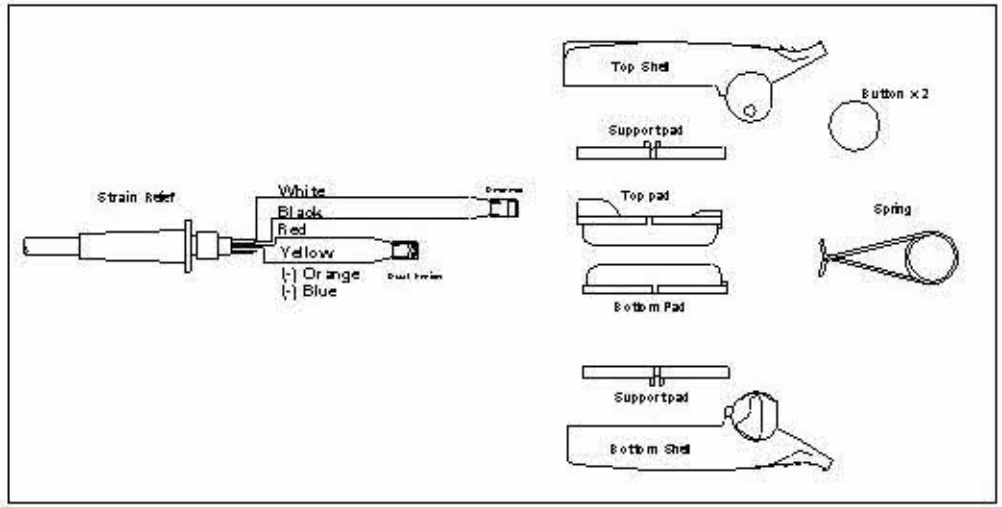


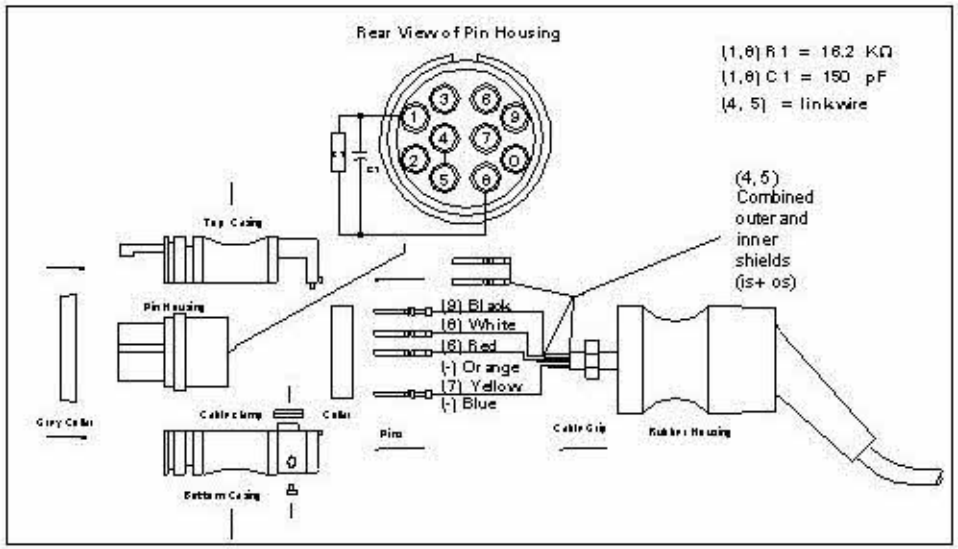
Enlarged front view of connector

DPK1 Female 10 Pin



Finger Probe





					Material:	Title	P872RA Datex	Dim in	mm	VIAMED Ltd.
								Tol	± 0.2	15 Station Rd
						Scale	Not To Scale	Drawn	J.Nirwan	Cross Hills, Keighley
REV	Date	N°	Drawn	Approv	Part No. 0018720	Date	30/01/02	Dwg No.	SPF-872	West Yorkshire BD20 7DT

Equipment type: Finger probe	Part Number:	
Batch Size		
Nos	**Viamed Part number**	**Description**
1	0010100	Viamed SpO2 finger probe service kit (White pads)
1	0010706	10 socket plug connector kit.
1	0032087	Resistor - 16K2, metal film
1	0032250	Capacitor, 150pF
3.65m	0030513	SpO2 cable - version D (production)
30mm	0032331	Heatshrink tubing - clear, 6.0mm, 7m reel
15mm	0032321	Heatshrink tubing - black, 6.0mm, 7m reel
10mm	0032310	Heatshrink tubing - black, 1.6mm, 25m reel

Assembly Clip

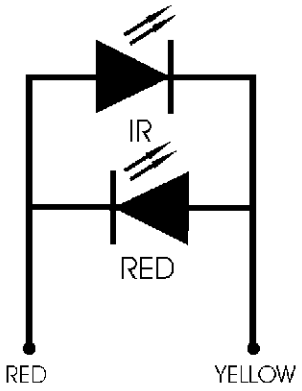
1. Prepare Clip end of cable as follows
   a. Attach strain relief "0010150," to relevant replacement cable, and glue in position.
   b. Strip back outer cable cover of exposed end 1mm from end of strain relief.
   c. Remove outer shield and paper, and cut off Kevlar fibres and any unused wires.
   d. Strip and tin relevant coloured wires (from red, yellow, blue, orange) to 13mm from end of cable cover. Strip and tin last 1mm of each wire.
   e. Cut inner white cable to 78mm from end of outer cable cover, strip last 8mm of inner cable cover, strip and tin last 1mm of black and white wires, cut off inner shield and discard
   f. Strip and tin ends of black and white wires.
2. Solder wires to components as per relevant diagram
3. Fit components into pads as follows
   a. Position components in drying rack.
   b. Place a small amount of flowable non-corrosive silicone sealant onto the face of the components.
   c. Place pads onto components, ensuring that both emitter and detector are central in pad windows. Also note that the silicone on the outside of the pad must run to the contour of the pad to make a smooth window - there should be no doming or sinking of the window. Any excess can be removed with a small screwdriver, also any deficit can be topped up with small amounts of silicone from a screwdriver tip - however these steps should be taken within 2 minutes of the

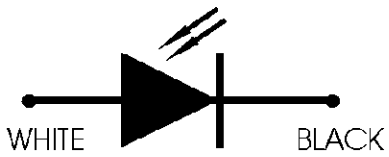
Drawn BY	MFG&DB
Date	26/04/01
Checked By	
Date	
Revised By	

pad being placed on the component, before the silicone has had time to become tacky, so that it is still flowing enough to ensure that the window will return to a smooth flat surface

d. Leave pads to set for 24 hours.

4. Assemble the clip as follows
   a. Glue white inner cable into channel in detector pad
   b. Fill around component with silicone
   c. Glue pad support onto back of detector pad.
   d. Glue pad support onto back of emitter pad.
   e. Glue white inner cable into channel in emitter pad.
   f. Fill around component with silicone
   g. Refit replacement springs "0010140," around pads.
   h. Push pads into position within clip, making sure that the pad support rim is securely underneath the pad retaining lugs - there are four retaining lugs for each pad. If any lugs are not holding the pad support securely, then add a drop of superglue to the relevant lug.
   i. Glue strain relief into position in clip body.
   j. Add labels as required.





Assembly Connector

5. a/ Check that all the relevant parts are in the connector kit - the kit should contain:

1 x grey front ring, 1 x shroud, 7 x ARBO pins (DPK1) with retaining ring, 1 x internal ring,

1 x strain relief, 1 x shell (with tongue), 1 x shell (without tongue),, 2 x screw M2.5x10,

1 x grey socket housing.

b/ Add a 30mm length of heatshrink (0032331) to the cable.

c/ Add the shroud to the cable.

d/ Add the internal ring to the cable.

e/ Add a 15mm length of heatshrink (0032321) to the cable.

f/ Strip the outer cable cover back by 30mm, using the cable stripper (0060031).

g/ Unwind, but do not remove, the outer shield. Remove the paper layer, and the Kevlar strands, using flush cutter (0060020), cutting them flush to the end of the cable cover. Also remove any unused wires, cutting them flush to the end of the cable cover, keeping one of the removed wires to be used as a link wire.

h/ Strip the inner cable cover back, using the cable stripper, as close to the end of the outer cable cover as possible. Unwind, but do not remove, the inner shield.

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i/ Twist together the outer and inner shield, and tin this between 12-18mm from the cable cover.

j/ Cut the twisted shields at 15mm from the outer cable cover using the flush cutter. Trim off any loose strands of shield flush to the cable cover. Cover this with 10mm length of heatshrink (0032310), and shrink on using a heatgun - this will help to isolate the shields from the resistor and capacitor.

k/ Cut the wires to 15mm from the outer cable cover. Strip and tin the last 2mm of each wire.

l/ Cut both of the legs of the 16K2 resistor (0032087) to 15mm from the resistor body. Bend the legs of the resistor to form a 'U' shape, ensuring that the ends of both legs are now level. PHOTO

m/ Cut both legs of the 150pF capacitor (0032250) to 15mm from the capacitor body, ensuring that the ends of both legs are level - there should be no need to bend the legs to form a 'U' shape, as the capacitor will normally be this shape anyway.

n/ Solder one leg of the resistor into one of the ARBO pins. Solder one leg of the the capacitor into the same pin. Solder also the white wire into the same pin. Solder the free leg of the resistor into another pin. Solder the free leg of the capacitor into the same pin. PHOTO

o/ Take the length of wire that was retained (from step g), and strip and tin the last 2mm of each end of that wire. Solder a pin to each end of the wire. Also solder the twisted shield into one of these pins. PHOTO

p/ Solder the remaining wires into the remaining pins.

q/ Referring to the wiring diagram, and ensuring that the pin retaining rings do not become detached, insert the pins into the socket housing as follows:

i/ Push the pin with the link wire attached into pin hole 5.

ii/ Push the pin with the link wire and shields attached into pin hole 4.

iii/ Push the pin with the resistor and capacitor attached into pin hole 1.

iv/ Push the pin with the resistor, capacitor, and white wire attached into pin hole 8.

v/ Push the remaining pins into the relevant pin holes.

r/ Push the 15mm piece of heatshrink (0032321) up over the cable cover, so that 10mm of the heatshrink covers the white cable cover, and the remaining 5mm projects beyond the cable cover and over onto the wires, and also covers any exposed shields. Shrink this into position using a heatgun.

s/ Screw the strain relief over the cable and into the shell (without tongue), at a point just above where the cable cover ends, so that the cord grip does not bite down upon the cable at a point where there is no cable cover beneath the heatshrink to protect the wires. There should also be a small degree of 'play' with the cable, so that when the connector is fitted together, there is no strain directly on the wires.

t/ Attach the cable tie to the cable, just below the strain relief, and tighten. Cut off the excess part of the cable tie using the flush cutter.

u/ Orientate the socket housing in the shell (without tongue), and add the shell (with tongue). Push up the internal ring into position around the shells. Push up the shroud around the connector. Finally add the front ring to the connector.

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Connector rear view:

1. R1 + C1
2. No pin
3. No pin
4. Link + main + inner shield
5. Link
6. Red
7. Yellow
8. R1 + C1 + white
9. Black
0. No pin

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Date	
Revised By	

15 DEC 1997

MEDICAL CABLES™

1340 Logan Avenue
Costa Mesa, CA 92626
Phone: (714) 545-3469
(800) 828-1599
Fax: (714) 545-7212

Pulse Oximeter Finger Probe Repair Procedure

Model: P872RA

1.1 P872RA Parts List

Item No.	Description	Quantity	Manufacture	Part Number
	Complete Clip Assembly	1	MCI	MC-P100A
1	Top Shell	1	MCI	MC-P101
2	Bottom Shell	1	MCI	MC-P102
3	Wire Spring	1	MCI	MC-P103
4	Buttons	2	MCI	MC-P104
5	Soft Finger Pad (LED)	1	MCI	MC-P105
6	Hard Finger Pad (Detector)	1	MCI	MC-P106
7	Top Pad Support Frame	1	MCI	MC-P107
8	Bottom Pad Support Frame	1	MCI	MC-P108
9	LED assembly	1	MCI	MC-P872-LED
10	Detector	1	MCI	MC-P872-DET
	Cable Assembly Kit		MCI	MC-P872-CAB
11	Cable	1	MCI	MC-P872-111
12	Connector Strain Relief Housing	1	MCI	MC-P872-112
13	Plastic Ring	1	MCI	MC-P872-113
14	Cord grip	1	MCI	MC-P872-114
15	Screws	2	MCI	MC-P872-115
16	Split mid-piece	1	MCI	MC-P872-116
17	Insert	1	MCI	MC-P872-117
18	Pins	7	MCI	MC-P872-118
19	16kΩ resistor	1	MCI	MC-P872-119
20	151 kmf capacitor	1	MCI	MC-P872-120
21	Outer Ring	1	MCI	MC-P872-121
22	Probe Strain Relief	1	MCI	MC-P872-122
23	Silicone (RTV)			
24	Glue			

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1.2 P872RA Repair Procedure

1.2.1 Probe Disassembly:

1. Inspect cable, shell, pads and connector for damage or cracks. Note any damage and list part that need to be replaced.

2. Cut and discard cable (item 11) at the probe strain relief (item 22) to remove from the finger probe clip assembly.

3. Remove top pad support frame (item 7) with soft finger pad (item 5) from top shell. Remove soft finger pad from support frame. Remove bottom pad support frame (item 8) with hard finger pad (item 6) from bottom shell (item 2). Remove hard finger pad from support frame.

4. Separate shells (items 1 & 2) and remove spring (item 3) and buttons (item 4) to disassemble finger probe.

1.2.2 Probe Testing:

5. Remove LED assembly (item 9) from top pad. Inspect for physical damage. Test the individual RED and IR LEDs. The test specifications for the LEDs are listed in Table 1 below.
If item 9 is within test specifications then reuse LED assembly. Replace assembly if Red or IR LED failed to meet test specifications.

6. Remove Detector (item 10) from bottom pad. Inspect detector for physical damage and test the Detector. The test specifications for the LEDs are listed in Table 1 below.
If item 10 is within test specifications then reuse detector. Replace item 10 if detector failed to meet test specifications.

Table 1 LED and Detector Test Specifications

	Test		Typ.	Max.	Range	Units	Test Conditions
Red LED	Forward Voltage	V_F	1.8	2.4	± 0.6	volts	I_F = 20 mA
IR LED	Forward Voltage	V_F				volts	
Detector	Forward Voltage	V_F				volts	

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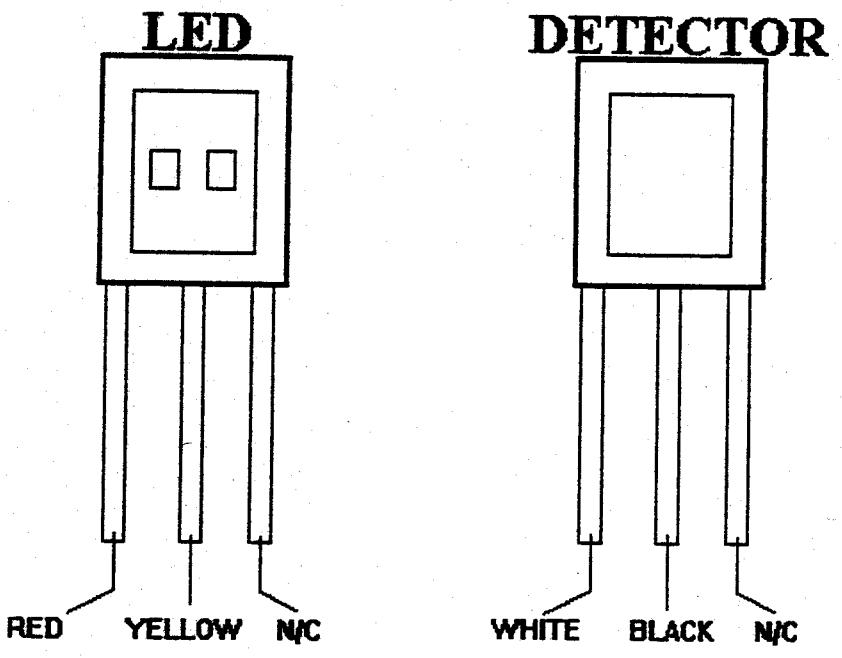
1.2.3 Probe Reassembly:

7. Replace cable. Attach connector strain relief housing (item 12) and platic ring (item 13) onto cable (item 11). Attach black wire to main shield. Attach wires (solder) onto pins (item 18). Attach resistor (item 19) and capacitor (item 20) accross pins 1 & 8. Attach jumper accross pins 4 & 5. Place pins int insert according to connector diagram. Attach bottom half of split mid-piece (item 16) to insert (item 17). Attach cord grip (item 14) with two screws (item 15) to bottom half of mid-piece. Attach top half of mid-piece and slide connector strain relief housing (item 12) and plastic ring (item 13) ont the mid-piece. Slide outer ring (item 21) onto front of connector.

8. Attach probe strain relief (item 22) to cable (item 11). Strip wires back. Connect wires (solder) to LED and Detector. Connect the red and yellow wires to the Led terminals. Connect the black and white wires to the Detector terminals. Test continuity.



9. Inspect finger pads (item 5 & 6) for damage or cracks. Replace finger pads if damaged or cracked. Slide the LED into the top pad and silicone (item 23) into place. Slide the Detector into the bottom pad and silicone (item 23) into place. Let silicone dry.

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10. Inspect top and bottom shell, button, and spring for damage or cracks. Replace items if necessary. Attach spring and buttons to top and bottom shell.

11. Inspect support frames and replace if damaged. Attach the top pad to the top support frame with glue (item 24). Attach the bottom pad to the bottom support frame with glue. Snap and glue top and bottom pads into top and bottom shell respectively.

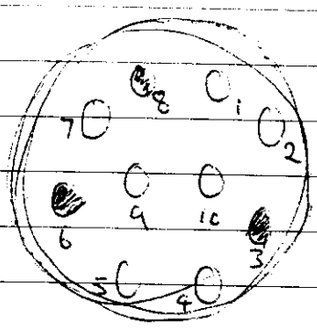
12. Test probe for SpO_2 measurement.

13. Send probe to Quality Control for testing

DATE: REPAIR

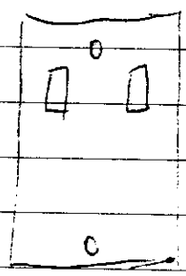
Connector END.

1/ Yellow + main shield
2/ Black + inner shield.
3/ N/C
4/ White + res + cap.
5/ Link

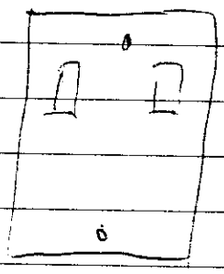


6/ N/C
7/ Resistor + Cap
8/ N/C
9/ Link
10/ RED.

L.E.D.

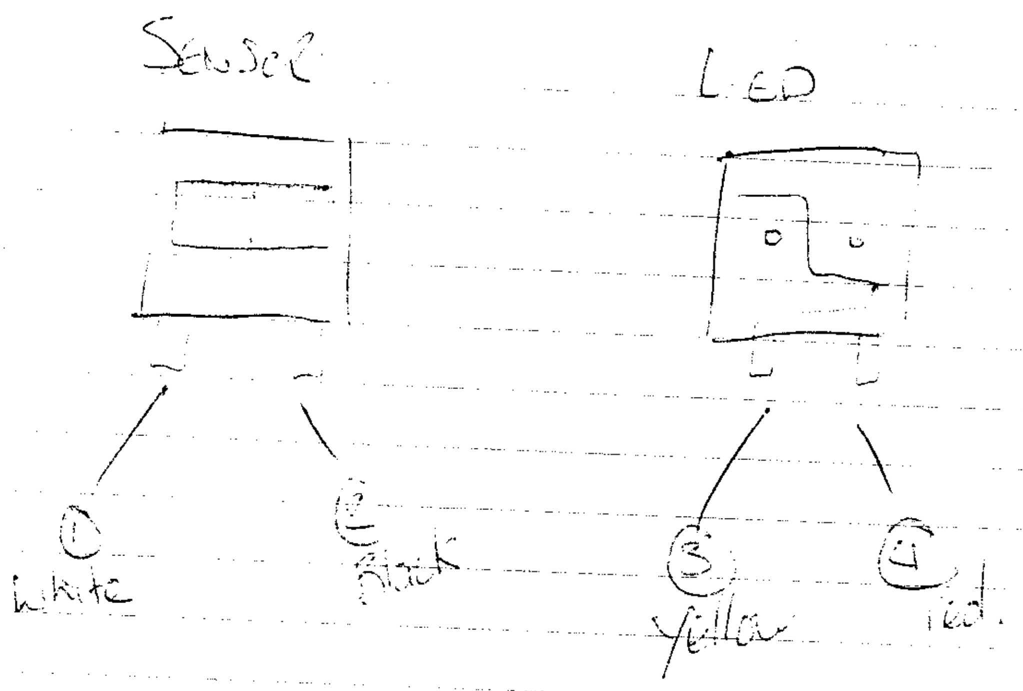


SENSOR



Vehicle 4 (?)

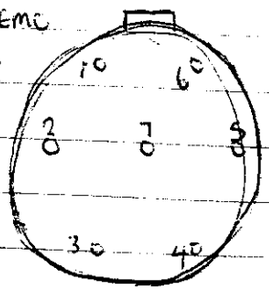
/ Strain relief. Red - yellow left 12 cm(?) unarmored. 10cm. black + white 12 cm.



INVIVO

P878 EA [redacted] Connector End

7 pin Lemo



from new parts

1/ 39K resistor
2/ Red
3/ 39K resistor
4/ Blue – converting (yellow).
5/ Black
6/ white
7/ inner/outer shields *

(PDS-C165)
(PDI-E833)

* thin both shields out as they may not fit in connector.

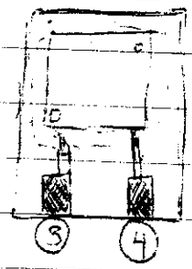
---

w/6/ Conversion use yellow instead of blue

Clip END LED

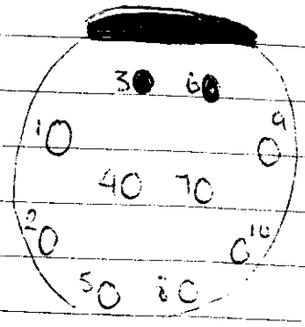
1/ Blue
2/ Red
3/ White
4/ Black

Sensor



[redacted] P888 EA (5+w) 12ft. 10/7/00.

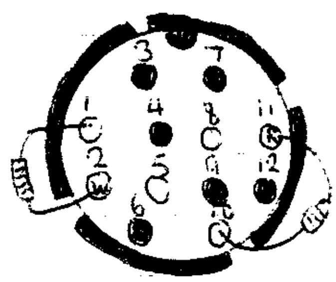
orange
Red
N/C
Yellow
75K r
N/C
100K Resistor
Both shields + both resistors
Black
white



Solder Side

w/6 Conversions use original resistor from P-867 EA + leave all wires on original probe

3/10/02   P886RA Kontron (build from scratch
12 foot.



1/ 2.2K res
2/ 2.2K res + white
3/ N/C
4/ N/C
5/ Black
6/ N/C
7/ N/C
8/ Yellow
9/ N/C
10/ 3.3K resistor
11/ 3.3K resistor + Both shields + Red
12/ N/C

N/B Blue + orange both get cut off

P888RA Rear View

~~LED~~

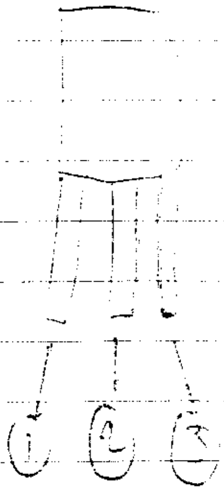
SENSOR

1/ Black
2/ White

S+W Rear View

~~SENSOR~~

LED

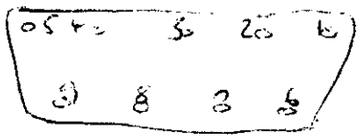


1/ orange
2/ Yellow
3 RED

21/9/00 P9713 (CONVERTED from P9564).

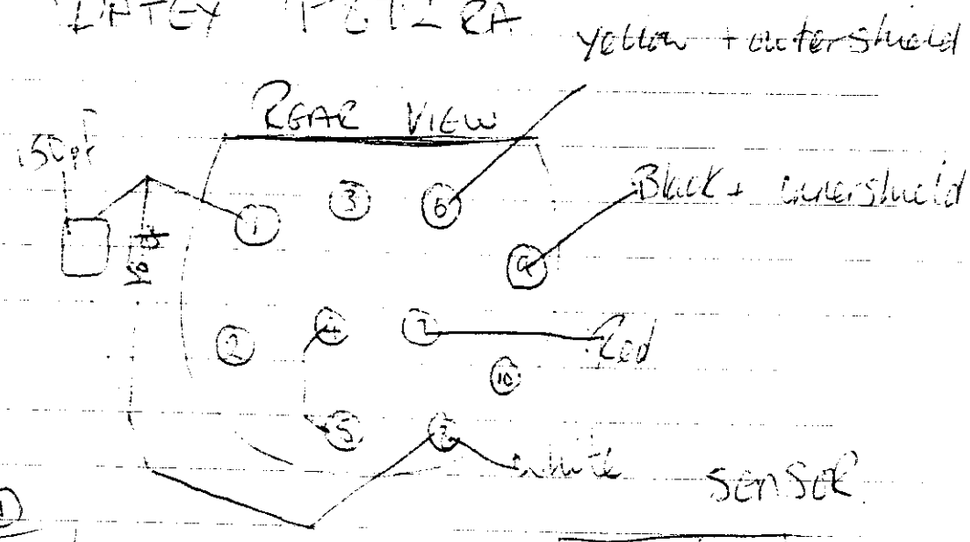
Connector.

Solder side



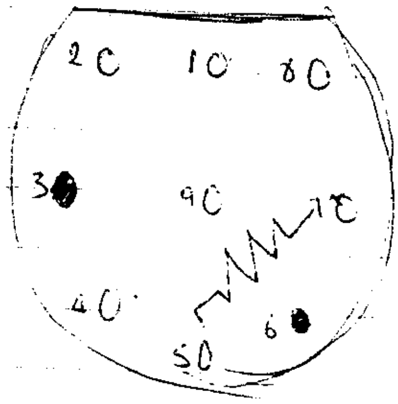
1 White
2 n/c
3 Red
4 Yellow
5 Blue
6 Black
7 n/c
8 Both shields
9 Orange

DATEX P372 RA



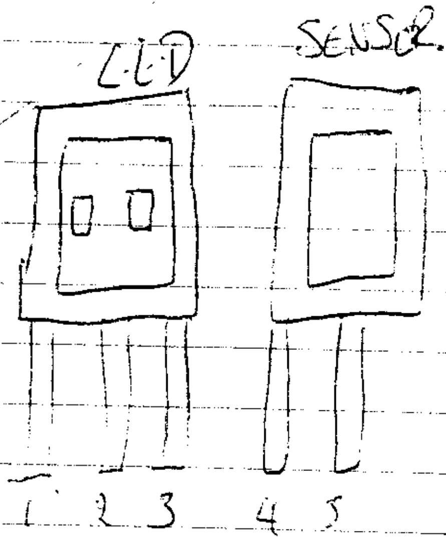
N/S Blue + orange are cut off

28/7/00 P867 RA. Omeda.
Hyperetronics 9 Pin. insertion side.



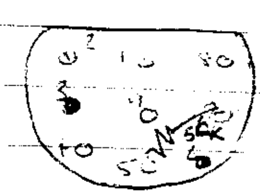
1/ orange
2/ RED
3/ N/C
4/ Yellow
5/
6/ N/C — 68KΩ resistor
7/ shields
8/ White
9/ Black

1/ RED
2/ Yellow
3/ orange
4/ white
5/ Black



18-9-00 P867RA Chmeda from scratch

1 Orange - Infra red
2 Red - Red
3 n/c
4 Yellow - Common
5 - 56K resistor
6 n/c
7 Both shields / 56K resistor
8 White
9 Black



RED Light
Common
I.R