

PAGE 1 OF 5
DATE: 02-16-2001
REVISION: B
ORIGINAL CFG NO: 988
CUSTOMER: IRCON GMBH
LOCATION: GERMANY

INFRARAIL SPECIAL NUMBER R724

PURPOSE AND DESCRIPTION:

CUSTOMER REQUIRES A INFRARAIL TEMPERATURE SYSTEM WITH A SPECIAL TEMPERATURE RANGE. IN ADDITION, THE CUSTOMER ALSO REQUIRES A FAULT CONDITION INDICATOR THAT WILL WARN THE USER WHEN THE SENSOR CABLE IS DISCONNECTED.

MODEL: DNS05-99C
RANGE: 400° - 900° DEG. C
OPTICAL RESOLUTION: D/50
SPECTRUM: 1.49 - 1.6 um

GENERILITY OF APPLICATION AND RESTRICTIONS:

UNRESTRICTED: SUITABLE FOR USE WITH ALL STANDARD OPTIONS.

WRITTEN BY: _____

A. DONADO

A. DONADO

APPROVED BY: _____

A. DONADO

DATE: _____

2-16-2001

INFRARAIL SPECIAL NUMBER R724

PRODUCTION INSTRUCTIONS:

START WITH A MODEL DNS05-08C ELECTRONICS MODULE, AND INSTALL M1 MODULE AS PER BILL OF MATERIAL ON PAGE 3.

FOR THE SENSOR, BUILD A STANDARD MODEL DNS05-08C.

CALIBRATION INSTRUCTIONS:

PRE-CAL: DO THE COMPUTERIZED LINEARIZER TEST PER STANDARD PROCEDURE.

FINAL-CAL:

!!! N O T E !!! CALIBRATION MUST MAKE THE MODIFICATIONS TO THE ELECTRONIC MODULE FOR THE SPECIAL FAULT INDICATION OPTION INCLUDED WITH THIS INSTRUMENT. THE MODIFICATIONS MUST BE COMPLETED BEFORE FINAL CAL IS DONE. FOLLOW THE INSTRUCTIONS ON PAGE 5 ATTACHED.

REFER TO CURRENT OUTPUTS OF PAGE 4.

CALIBRATE AS PER STANDARD.

TEST THE FAULT INDICATION FEATURE BY DISCONNECTING THE INTERCONNECTING CABLE FROM THE SENSOR WHILE FOCUSED ON A BLACKBODY. WHEN THIS IS DONE, THE ELECTRONICS MODULE OUTPUT SHOULD BE 20.00 mA OR HIGHER. THIS HIGH OUTPUT WITH THE SENSOR DISCONNECTED, PROVIDES THE CUSTOMER WITH A FAULT INDICATION SIGNAL TO WARN OF A DISCONNECTED SENSOR CABLE.

MANUAL INSTRUCTIONS:

GENERIC INFRARAIL SERIES MANUAL.

INFRARAIL SPECIAL NUMBER R724

REVISION: B
DATE: 02-16-2001

M1 MODULE ASSEMBLY BILL OF MATERIAL

<u>SYMBOL</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>		
R1	102213011	RESISTOR	221K	OHM METAL FILM 1/4W 1%
R44	101872011	RESISTOR	18.7K	OHM METAL FILM 1/4W 1%
R54	101183011	RESISTOR	118K	OHM METAL FILM 1/4W 1%
R45	101502011	RESISTOR	15.0K	OHM METAL FILM 1/4W 1%
R55	106042011	RESISTOR	60.4K	OHM METAL FILM 1/4W 1%
R46	101022011	RESISTOR	10.2K	OHM METAL FILM 1/4W 1%
R56	101003011	RESISTOR	100K	OHM METAL FILM 1/4W 1%
R47	106341011	RESISTOR	6.34K	OHM METAL FILM 1/4W 1%
R57	101743011	RESISTOR	174K	OHM METAL FILM 1/4W 1%
R48	103831011	RESISTOR	3.83K	OHM METAL FILM 1/4W 1%
R58	102943011	RESISTOR	294K	OHM METAL FILM 1/4W 1%
R49	102151011	RESISTOR	2.15K	OHM METAL FILM 1/4W 1%
R59	105363011	RESISTOR	536K	OHM METAL FILM 1/4W 1%
R50	101181011	RESISTOR	1.18K	OHM METAL FILM 1/4W 1%
R60	101074011	RESISTOR	1.07M	OHM METAL FILM 1/4W 1%
R51	106190011	RESISTOR	619	OHM METAL FILM 1/4W 1%
R61	102104011	RESISTOR	2.10M	OHM METAL FILM 1/4W 1%
R52	103160011	RESISTOR	316	OHM METAL FILM 1/4W 1%
R53	102670011	RESISTOR	267	OHM METAL FILM 1/4W 1%
R62	104324011	RESISTOR	4.32M	OHM METAL FILM 1/4W 1%

INFRARAIL SPECIAL NUMBER R724
TEMPERATURE RANGE: 400 TO 900 DEGREES C
SPECTRUM: 1.49 TO 1.60 MICRONS

TEMPERATURE DEGREES C	SENSOR OUTPUT IN uAMPS	INDICATOR OUTPUT mAMPS
400.0	0.0408	4.000
425.0	0.0668	4.800
450.0	0.1058	5.600
475.0	0.1625	6.400
500.0	0.2428	7.200
525.0	0.3538	8.000
550.0	0.5038	8.800
575.0	0.7027	9.600
600.0	0.9617	10.400
625.0	1.2934	11.200
650.0	1.7119	12.000
675.0	2.2326	12.800
700.0	2.8723	13.600
725.0	3.6490	14.400
750.0	4.5820	15.200
775.0	5.6915	16.000
800.0	6.9989	16.800
825.0	8.5261	17.600
850.0	10.2958	18.400
875.0	12.3316	19.200
900.0	14.6570	20.000

FAULT INDICATION MODIFICATIONS SPECIAL R724

REMOVE JUMBER JP1
ON COMPONENT SIDE

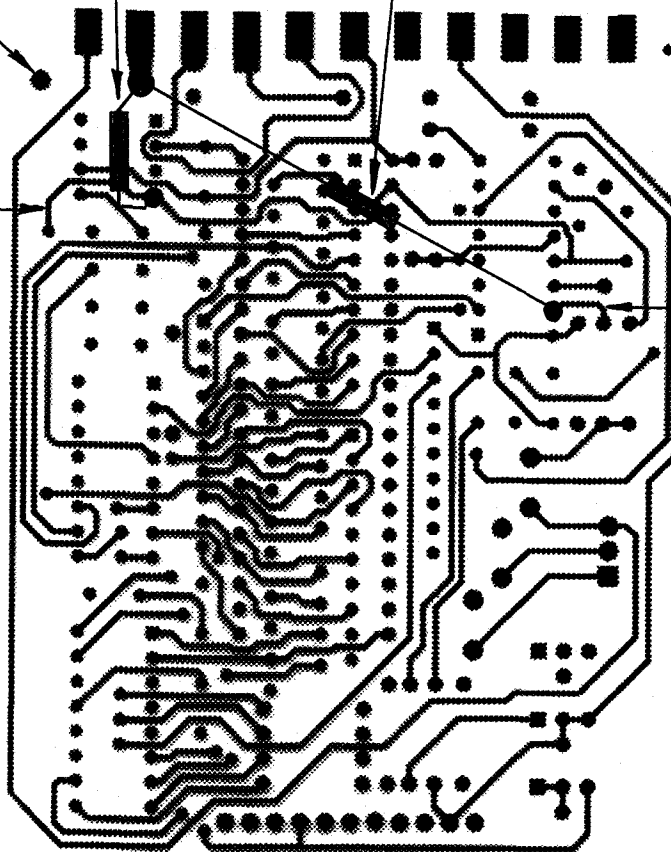
ADD RESISTOR 24.9 Kohm

ADD RESISTOR 274 Kohm

REFERENCE
FOIL

REFERENCE
FOIL

NOTE:
ADD SHRINK
TUBING TO 274K
RESISTOR AND
REMOVE LEADS
FROM BOARD
TO PREVENT
SHORTS AND
INTERFERENCE



FOIL SIDE, PCB P.N. 50249-3

See Rev. B
2-16-2001 A.D.

PAGE 1 OF 4
DATE: 4-21-1999
REVISION: A
ORIGINAL CFG NO: 988
CUSTOMER: IRCON GMBH
LOCATION: GERMANY

INFRARAIL SPECIAL NUMBER R724

PURPOSE AND DESCRIPTION:

CUSTOMER REQUIRES A INFRARAIL TEMPERATURE SYSTEM WITH A SPECIAL TEMPERATURE RANGE. IN ADDITION, THE CUSTOMER ALSO REQUIRES A FAULT CONDITION INDICATOR THAT WILL WARN THE USER WHEN THE SENSOR CABLE IS DISCONNECTED.

MODEL: DNS05-99C
RANGE: 400° - 900° DEG. C
OPTICAL RESOLUTION: D/50
SPECTRUM: 1.49 - 1.6 um

GENERALITY OF APPLICATION AND RESTRICTIONS:

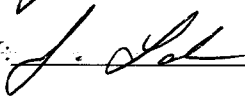
UNRESTRICTED: SUITABLE FOR USE WITH ALL STANDARD OPTIONS.

WRITTEN BY:



J. LAKNER

APPROVED BY:



DATE:

4-21-99

INFRARAIL SPECIAL NUMBER R724

REVISION: A
DATE: 4-21-1999

PRODUCTION INSTRUCTIONS:

START WITH A MODEL DNS05-08C ELECTRONICS MODULE, AND INSTALL M1 MODULE AS PER BILL OF MATERIAL ON PAGE 3.

FOR THE SENSOR, BUILD A STANDARD MODEL DNS05-08C.

WHEN ASSEMBLY IS COMPLETED, DELIVER THE ELECTRONICS MODULE TO ENGINEERING FOR ADDITIONAL MODIFICATIONS.

CALIBRATION INSTRUCTIONS:

CALIBRATE AS PER STANDARD.

REFER TO CURRENT OUTPUTS OF PAGE 4.

TEST THE FAULT INDICATION FEATURE BY DISCONNECTING THE INTERCONNECTING CABLE FROM THE SENSOR WHILE FOCUSED ON A BLACKBODY. WHEN THIS IS DONE, THE ELECTRONICS MODULE OUTPUT SHOULD BE 20.00 mA. THIS HIGH OUTPUT WITH THE SENSOR DISCONNECTED, PROVIDES THE CUSTOMER WITH A FAULT INDICATION SIGNAL TO WARN OF A DISCONNECTED SENSOR CABLE.

ENGINEERING INSTRUCTIONS:

MODIFY THE ELECTRONICS MODULE PER AMMENDED DRAWING C-20211.

MANUAL INSTRUCTIONS:

GENERIC INFRARAIL SERIES MANUAL.

INFRARAIL SPECIAL NUMBER R724

REVISION: A
DATE: 04-21-1999

MI MODULE ASSEMBLY BILL OF MATERIAL

<u>SYMBOL</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>		
R1	102213011	RESISTOR	221K OHM	METAL FILM 1/4W 1%
R44	101872011	RESISTOR	18.7K OHM	METAL FILM 1/4W 1%
R54	101183011	RESISTOR	118K OHM	METAL FILM 1/4W 1%
R45	101502011	RESISTOR	15.0K OHM	METAL FILM 1/4W 1%
R55	106042011	RESISTOR	60.4K OHM	METAL FILM 1/4W 1%
R46	101022011	RESISTOR	10.2K OHM	METAL FILM 1/4W 1%
R56	101003011	RESISTOR	100K OHM	METAL FILM 1/4W 1%
R47	106341011	RESISTOR	6.34K OHM	METAL FILM 1/4W 1%
R57	101743011	RESISTOR	174K OHM	METAL FILM 1/4W 1%
R48	103831011	RESISTOR	3.83K OHM	METAL FILM 1/4W 1%
R58	102943011	RESISTOR	294K OHM	METAL FILM 1/4W 1%
R49	102151011	RESISTOR	2.15K OHM	METAL FILM 1/4W 1%
R59	105363011	RESISTOR	536K OHM	METAL FILM 1/4W 1%
R50	101181011	RESISTOR	1.18K OHM	METAL FILM 1/4W 1%
R60	101074011	RESISTOR	1.07M OHM	METAL FILM 1/4W 1%
R51	106190011	RESISTOR	619 OHM	METAL FILM 1/4W 1%
R61	102104011	RESISTOR	2.10M OHM	METAL FILM 1/4W 1%
R52	103160011	RESISTOR	316 OHM	METAL FILM 1/4W 1%
R53	102670011	RESISTOR	267 OHM	METAL FILM 1/4W 1%
R62	104324011	RESISTOR	4.32M OHM	METAL FILM 1/4W 1%

INFRARAIL SPECIAL NUMBER R724
TEMPERATURE RANGE: 400 TO 900 DEGREES C
SPECTRUM: 1.49 TO 1.60 MICRONS

TEMPERATURE DEGREES C	SENSOR OUTPUT IN uAMPS	INDICATOR OUTPUT mAMPS
400.0	0.0408	4.000
425.0	0.0668	4.800
450.0	0.1058	5.600
475.0	0.1625	6.400
500.0	0.2428	7.200
525.0	0.3538	8.000
550.0	0.5038	8.800
575.0	0.7027	9.600
600.0	0.9617	10.400
625.0	1.2934	11.200
650.0	1.7119	12.000
675.0	2.2326	12.800
700.0	2.8723	13.600
725.0	3.6490	14.400
750.0	4.5820	15.200
775.0	5.6915	16.000
800.0	6.9989	16.800
825.0	8.5261	17.600
850.0	10.2958	18.400
875.0	12.3316	19.200
900.0	14.6570	20.000

BOM Number : DN#988 - IRCON INFRARAIL IRT

SO-LI: 70314*1

Level	Part Number	Description	Quantity	UM	Alt.	MB X	ECO No.	ECO Date	Start Use	End Use
1	DNODNS	DN PRICES	1.0000	EA		M P				
1	NL12021	NEW 'N'# FOR L12021	1.0000	EA		M P				
2	L12021	P1 LENS ASSEMBLY	1.0000	EA		M P				
3	441543	LENS TUBE HSG FINISHED P	1.0000	EA		B				
3	431992	O RING 1 1/16 ID X 1/16 T	1.0000	EA		B				
3	610232	LENS ELEMENT TYPE P1	1.0000	EA		B				
3	442682	RETAINER RING OBJECTIVE L	1.0000	EA		B				
3	L12021/01	SEE EXTENDED DESCRIPTION	1.0000	EA		B P				
1	C11197	SH FINAL ASSY (STD) (S-SER	1.0000	EA		M P				
2	A10116	LENS ASSEMBLY - "P" SERIE	1.0000	EA		M P	3781	10-08-96		
3	T-A10116-1	SELECT "P" TYPE LENS	1.0000	EA		B	4022	10-01-97		
3	LENS	UNDEFINED	1.0000	EA		B P	4022	10-01-97		
2	T-C11197-2	SELECT SH REAR PLT OPTICA	1.0000	EA		B	3781	10-08-96		
2	477252	LABEL-CAL. VOID TAMPERPRO	1.0000	EA		B	3781	10-08-96		
2	477042	SERIAL PLATE LR-SENSOR	1.0000	EA		B	3781	10-08-96		
2	433322	GASKET S/N PLATE LR-SERIE	1.0000	EA		B	3781	10-08-96		
2	452932	SCREW #06-32 X 1/4" PH T	4.0000	EA		B	3781	10-08-96		
2	C10288	SH HOUSING ASSY (STD) (1	1.0000	EA		M P	3781	10-08-96		
3	442103	SH ENCLOSURE MACHINED	1.0000	EA		B	2530	07-11-91		
3	433442	EMI GASKET, FOR ROUND S.H	1.0000	EA		B	2530	07-11-91		
3	20100874F	SCREW #10-32 X 1/4 SOCKET	1.0000	EA		B	2530	07-11-91		
3	20100874G	SCREW #10-32 X 1/4 SLOTTE	1.0000	EA		B	2530	07-11-91		
3	433222	GASKET OBJECTIVE LENS WIN	1.0000	EA		B	2530	07-11-91		
3	620102	OBJECTIVE WINDOW MODLINE	1.0000	EA		B	2530	07-11-91		
3	433212	GASKET OBJECTIVE APERTURE	1.0000	EA		B	2530	07-11-91		
3	200612330	SCREW #6-32 X 3/8 PH SLOT	2.0000	EA		B	2530	07-11-91		
3	T-C10288-1	SELECT OBJ. APER. MOD+	1.0000	EA		B	2530	07-11-91		
3	T-C10288-2	SELECT MIR MR20 CAL FLAG	1.0000	EA		B	2530	07-11-91		
3	T-C10288-3	SEL. OBJ. APER. 11X,22B,S	1.0000	EA		B	2530	07-11-91		
3	990100028	SEALANT RTV SILICONE BLAC	1.0000	EA		B	2530	07-11-91		
2	200820030	SCREW #8-32 X 5/8 PH SLOT	1.0000	EA		B	3781	10-08-96		
2	220802030	WASHER #8 LOCK EXT TOOTH	1.0000	EA		B	3781	10-08-96		
2	200616440	SCREW #6-32 X 1/2 FIL SLO	4.0000	EA		B	3781	10-08-96		
2	T-C11197-1	DETERMINE IF CABLE IS REQ	1.0000	EA		B	3781	10-08-96		
1	D11196	PVC INTERCONNECT CABLE AS	1.0000	EA		M P				
2	560052	CABLE PVC 2 COND 1100/200	1.0000	FT		B	3913	04-02-97		
2	D11196/01	SEE EXTENDED DESCRIPTION	3.0000	EA		B				
2	D11196/02	SEE EXTENDED DESCRIPTION	8.0000	EA		B				
2	D11196/03	SEE EXTENDED DESCRIPTION	8.0000	EA		B				
2	575932	CONN. CIRC 10SL-3 BACKSHE	1.0000	EA		B	3913	04-02-97		
2	3210G00X0	TUBING #10 PVC CLEAR	3.0000	IN		B	3913	04-02-97		
2	3212G00X0	TUBING #12 PVC CLEAR	1.0000	IN		B	3913	04-02-97		
2	575902	CONN. CIRC 10SL-3 STR PLU	1.0000	EA		B	3913	04-02-97		
2	3216I1400	TUBING 1/4" SHRINKABLE BL	1.0000	IN		B	3913	04-02-97		
2	990100027	ADHESIVE LOCTITE 272	1.0000	EA		B	3913	04-02-97		
2	C-CABLE	DETERMINE CABLE LENGTH FR	1.0000	EA		M P	3913	04-02-97		
2	477202	LABEL INFRARAIL (2.0" X 0	1.0000	EA		B	3913	04-02-97		
1	U-D11196-C	12 FEET OF CABLE	1.0000	EA		M P				
2	560052	CABLE PVC 2 COND 1100/200	12.0000	FT		B				
1	U-M1-R610	MODULE ASSEMBLY - M1 - (I	1.0000	EA		M P				
2	102213011	RES. 221K OHM MF 1/4W 1%	1.0000	EA		B				

BOM Number : DN#988 - IRCON INFRARAIL IRT

SO-LI: 70314*1

Level	Part Number	Description	Quantity	UM	Alt	MB X	ECO No.	ECO Date	Start Use	End Use
2	101872011	RES. 18.7K OHM MF 1/4W 1%	1.0000	EA		B				
2	101183011	RES. 118K OHM MF 1/4W 1%	1.0000	EA		B				
2	101502011	RES. 15.0K OHM MF 1/4W 1%	1.0000	EA		B				
2	106042011	RES. 60.4K OHM MF 1/4W 1%	1.0000	EA		B				
2	101022011	RES. 10.2K OHM MF 1/4W 1%	1.0000	EA		B				
2	101003011	RES. 100K OHM MF 1/4W 1%	1.0000	EA		B				
2	106341011	RES. 6.34K OHM MF 1/4W 1%	1.0000	EA		B				
2	101743011	RES. 174K OHM MF 1/4W 1%	1.0000	EA		B				
2	103831011	RES. 3.83K OHM MF 1/4W 1%	1.0000	EA		B				
2	102943011	RES. 294K OHM MF 1/4W 1%	1.0000	EA		B				
2	102151011	RES. 2.15K OHM MF 1/4W 1%	1.0000	EA		B				
2	105363011	RES. 536K OHM MF 1/4W 1%	1.0000	EA		B				
2	101181011	RES. 1.18K OHM MF 1/4W 1%	1.0000	EA		B				
2	101074011	RES. 1.07M OHM MF 1/4W 1%	1.0000	EA		B				
2	106190011	RES. 619 OHM MF 1/4W 1%	1.0000	EA		B				
2	102104011	RES. 2.10M OHM MF 1/4W 1%	1.0000	EA		B				
2	103160011	RES. 316 OHM MF 1/4W 1%	1.0000	EA		B				
2	102670011	RES. 267 OHM MF 1/4W 1%	1.0000	EA		B				
2	104324011	RES. 4.32M OHM MF 1/4W 1%	1.0000	EA		B				
1	U-C10288-1	OBJECTIVE APERTURE	1.0000	EA		M P				
2	441532	OBJECTIVE APERTURE 6000 S	1.0000	EA		B				
1	C11203	SH REAR PLT (OPTICAL) ASS	1.0000	EA		M P				
2	C11204	SH REAR PLT BASIC MECH/ W	1.0000	EA		M P	3646	02-28-96		
3	442913	REAR PLATE SH FINISHED 11	1.0000	EA		B	3682	06-10-96		
3	430292	CONN. GASKET 2000 SERIES	1.0000	EA		B	3682	06-10-96		
3	575892	CONN. CIRC 3 RECPT 10SL-3	1.0000	EA		B	3682	06-10-96		
3	220403030	WASHER #4 LOCK SPLIT RING	4.0000	EA		B	3682	06-10-96		
3	200412040	SCREW #4-40 X 3/8 PH SLOT	3.0000	EA		B	3682	06-10-96		
3	570892	CAP W/CHAIN EYE LENS COVE	1.0000	EA		B	3682	06-10-96		
3	200416031	SCREW #4-40 X 1/2 PH SLOT	1.0000	EA		B	3682	06-10-96		
3	474772	LABEL GROUND WARNING	1.0000	EA		B	3682	06-10-96		
3	330000005	CABLE MOUNT BASE #8 SCREW	1.0000	EA		B	3682	06-10-96		
3	200612140	SCREW #6-32 X 3/8 BH SLOT	1.0000	EA		B	3682	06-10-96		
3	220601030	WASHER #6 LOCK INT TOOTH	3.0000	EA		B	3682	06-10-96		
3	T-C11204-1	SELECT DET. MOUNTING BLK	1.0000	EA		B	3682	06-10-96		
3	200616140	SCREW #6-32 X 1/2 BH SLOT	2.0000	EA		B	3682	06-10-96		
3	220600030	WASHER #6 FLAT 3/8OD	2.0000	EA		B	3682	06-10-96		
3	T-C11204-2	SELECT DETECTOR ASSY (S-S	1.0000	EA		B	3682	06-10-96		
3	312430100	WIRE 24AWG BARE SOLID	1.0000	IN		B	3682	06-10-96		
3	330000001	TYWRAP SMALL	1.0000	EA		B	3682	06-10-96		
2	T-C11203-1	SELECT RETICLE (1.6 MICRO	1.0000	EA		B	3646	02-28-96		
2	431312	LENS RETICLE SPACER 6	1.0000	EA		B	3646	02-28-96		
2	432652	O RING .75ID X .875OD #18	1.0000	EA		B	3646	02-28-96		
2	610132	FIELD LENS ALL M1 SERIES	1.0000	EA		B	3646	02-28-96		
2	450022	RETAINING RING FIELD LENS	1.0000	EA		B	3646	02-28-96		
2	B11131	FOLDING MIRROR ASSY (1.6	1.0000	EA		M P	3646	02-28-96		
3	L13005	FOLDING MIRROR 1.6 MICRON	1.0000	EA		M P				
4	441522	FOLDING MIRROR PLATE 6000	1.0000	EA		B				
4	630132	MIRROR, DICHROIC 1.6 MICR	1.0000	EA		B				
4	990100002	EPOXY HARDMAN #4005 GEN P	1.0000	EA		B				
3	T-B11131-X	FLOW TAG TEXT	1.0000	EA		B				

BOM Number : DN#988 - IRCON INFRARAIL IRT

SO-LI: 70314*1

Level	Part Number	Description	Quantity	UM	Alt	MB X	ECO No.	ECO Date	StartUse	End Use
2	20061293P	SCREW #6-32 X 3/8 PH PHL	2.0000	EA		B	3646	02-28-96		
2	610262	EYE LENS 2000/6000 SERIES	1.0000	EA		B	3646	02-28-96		
2	410242	RETAINING RING 0.482 X 0.	1.0000	EA		B	3646	02-28-96		
2	990100002	EPOXY HARDMAN #4005 GEN P	1.0000	EA		B	3646	02-28-96		
2	990100001	ADHESIVE LOCTITE 222	1.0000	EA		B	3646	02-28-96		
2	640552	FILTER, BANDPASS	1.0000	EA		B	3646	02-28-96		
2	431342	DET. RETAINER TO-5	1.0000	EA		B	3646	02-28-96		
1	U-66014-2	RET. D/50 0.056" DIA	1.0000	EA		M P				
2	660142	RETICLE X056	1.0000	EA		B				
1	U-C111124-5	SH DETECTOR MTG. BLK. ASS	1.0000	EA		M P				
2	442122	DET. MOUNTING BLOCK M	1.0000	EA		B	3646	02-28-96		
2	433152	HOLDER DET, FILTER & STOP	1.0000	EA		B	3646	02-28-96		
2	446793	FIELD STOP .055	1.0000	EA		B	3646	02-28-96		
2	990100016	EPOXY HARDMAN #4001 3-5 M	1.0000	EA		B	3646	02-28-96		
2	200404130	SCREW #4-40 X 1/8 BH SLOT	1.0000	EA		B	3646	02-28-96		
2	433162	O RING .319ID X .028W 70	1.0000	EA		B	3646	02-28-96		
2	451372	CAL SCREW 1100/2000 SERIE	1.0000	EA		B	3646	02-28-96		
1	D11191	INFRARAIL BOX ASSEMBLY	1.0000	EA		M P				
2	433332	ENCLOSURE, DIN BOX, MODIF	1.0000	EA		B	3671	04-08-96		
2	C11187	POWER SUPPLY/ PEAK-PICKER	1.0000	EA		M P	3671	04-08-96		
3	C20212	SCHEMATIC: POWER SUPPLY/	1.0000	EA		M P	4202	01-14-99		
3	LDN200	PWR SUPPLY/ PP PCB ASSY	1.0000	EA		M P	4202	01-14-99		
4	502505	PCB DIN RAIL POWER PEAK-P	1.0000	EA		B	3769	08-05-96		
4	LDN200/01	SEE EXTENDED DESCRIPTION	8.0000	EA		B P				
4	533082	TRAN. MJE800 NPN - DARLIN	1.0000	EA		B	3769	08-05-96		
4	LDN200/02	SEE EXTENDED DESCRIPTION	8.0000	EA		B P				
4	LDN200/03	SEE EXTENDED DESCRIPTION	5.0000	EA		B P				
4	530882	DIODE 1N4002 GP RECTIFIER	1.0000	EA		B	3769	08-05-96		
4	532952	OP-AMP OP80GP ULTRA LOW B	2.0000	EA		B	3769	08-05-96		
4	532322	IC 4053B ANALOG MUX/DEMUX	1.0000	EA		B	3769	08-05-96		
4	531862	OP-AMP LM346N PROGRAM QUA	1.0000	EA		B	3769	08-05-96		
4	102493011	RES. 249K OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	103321011	RES. 3.32K OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	101820011	RES. 182 OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	104421011	RES. 4.42K OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	106654011	RES. 6.65M OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	104993011	RES. 499K OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	104021011	RES. 4.02K OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	105364011	RES. 5.36M OHM MF 1/4W 1%	2.0000	EA		B	3769	08-05-96		
4	103480011	RES. 348 OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	100000990	JUMPER DUMMY RESISTOR	4.0000	EA		B	3769	08-05-96		
4	101000011	RES. 100 OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	101003011	RES. 100K OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	101004011	RES. 1.00M OHM MF 1/4W 1%	4.0000	EA		B	3769	08-05-96		
4	102001011	RES. 2.00K OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	102003011	RES. 200K OHM MF 1/4W 1%	2.0000	EA		B	3769	08-05-96		
4	104991011	RES. 4.99K OHM MF 1/4W 1%	1.0000	EA		B	3769	08-05-96		
4	530572	DIODE 1N4446 SWITCHING	2.0000	EA		B	3769	08-05-96		
4	530532	DIODE FD300 GENERAL PURPO	1.0000	EA		B	3769	08-05-96		
4	521852	CAP. 0.68 MFD 50V CERAMIC	1.0000	EA		B	3769	08-05-96		
4	521972	CAP. .047 MFD 50V CER X7	1.0000	EA		B	3769	08-05-96		

BOM Number : DN#988 - IRCON INFRARAIL IRT

SO-LI: 70314*1

Level	Part Number	Description	Quantity	UM	Alt	MB X	ECO No.	ECO Date	StartUse	End Use
4	521072	CAP. 22MFD 16V TANT 10%	2.0000	EA		B	3769	08-05-96		
4	551122	CHOKER 9250-122 1.2 UH, .1	2.0000	EA		B	3769	08-05-96		
4	521902	CAP. NPO 1000pf 200V .2LS	1.0000	EA		B	3769	08-05-96		
4	521862	CAP. 3.3 MFD 50V CERAMC X	1.0000	EA		B	3769	08-05-96		
4	521872	CAP. 1.0 MFD 50V CERAMIC	5.0000	EA		B	3769	08-05-96		
4	522002	CAP. .01 MFD 200V CERAMIC	6.0000	EA		B	3769	08-05-96		
4	531892	REG. LM317LZ +1.2/37V ADJ	1.0000	EA		B	3769	08-05-96		
4	431902	BIVAR PERMO PAD 0.250 DIA	1.0000	EA		B	3769	08-05-96		
4	530862	TRAN. 2N2222A NPN MED POW	1.0000	EA		B	3769	08-05-96		
4	551152	INDUCTOR 100UH +/-10% IMS	2.0000	EA		B	3769	08-05-96		
4	531882	DIODE LM385BZ-2.5 2.5V RE	6.0000	EA		B	3769	08-05-96		
4	575602	CONN. HDR AMP STRAIGHT 5	1.0000	EA		B	3769	08-05-96		
4	574592	CONN. HDR AMP STRAIGHT 4	1.0000	EA		B	3769	08-05-96		
4	LDN200/04	SEE EXTENDED DESCRIPTION	6.0000	EA		B P				
4	572732	HEADER SNGL 36 PIN .1 CNT	11.0000	EA		B	3769	08-05-96		
4	LDN200/05	SEE EXTENDED DESCRIPTION	5.0000	EA		B P				
2	C11186	PREAMP/ LINEARIZER PCB AS	1.0000	EA		M P	3671	04-08-96		
3	C20211	SCHEMATIC: PREAMP/ LINEAR	1.0000	EA		M P	3659	04-12-96		
3	LDN100	PREAMP/ LIN PCB ASSY INFR	1.0000	EA		M P	3659	04-12-96		
4	502493	PCB DIN RAIL LINEARIZER	1.0000	EA		B	3767	08-07-96		
4	LDN100/01	SEE EXTENDED DESCRIPTION	8.0000	EA		B P				
4	LDN100/02	SEE EXTENDED DESCRIPTION	1.0000	EA		B P				
4	532982	OP-AMP AD548CQ LOW PWR BI	1.0000	EA		B	3767	08-07-96		
4	531862	OP-AMP LM346N PROGRAM QUA	2.0000	EA		B	3767	08-07-96		
4	532992	OP-AMP OP490EY LOW VOLT Q	1.0000	EA		B	3767	08-07-96		
4	530532	DIODE FD300 GENERAL PURPO	16.0000	EA		B	3767	08-07-96		
4	514632	RES. 330K NETWORK 10 PIN	2.0000	EA		B	3767	08-07-96		
4	514642	RES. 330K NETWORK 10 PIN	2.0000	EA		B	3767	08-07-96		
4	104533011	RES. 453K OHM MF 1/4W 1%	1.0000	EA		B	3767	08-07-96		
4	1010R0011	RES. 10.0 OHM MF 1/4W 1%	1.0000	EA		B	3767	08-07-96		
4	102743011	RES. 274K OHM MF 1/4W 1%	1.0000	EA		B	3767	08-07-96		
4	102103011	RES. 210K OHM MF 1/4W 1%	1.0000	EA		B	3767	08-07-96		
4	105364011	RES. 5.36M OHM MF 1/4W 1%	4.0000	EA		B	3767	08-07-96		
4	101002011	RES. 10.0K OHM MF 1/4W 1%	1.0000	EA		B	3767	08-07-96		
4	101003011	RES. 100K OHM MF 1/4W 1%	1.0000	EA		B	3767	08-07-96		
4	102003011	RES. 200K OHM MF 1/4W 1%	2.0000	EA		B	3767	08-07-96		
4	101000011	RES. 100 OHM MF 1/4W 1%	2.0000	EA		B	3767	08-07-96		
4	100000990	JUMPER DUMMY RESISTOR	1.0000	EA		B	3767	08-07-96		
4	551122	CHOKER 9250-122 1.2 UH, .1	1.0000	EA		B	3767	08-07-96		
4	540412	FERRITE BEAD ON LEAD AXIA	3.0000	EA		B	3767	08-07-96		
4	522002	CAP. .01 MFD 200V CERAMIC	7.0000	EA		B	3767	08-07-96		
4	521902	CAP. NPO 1000pf 200V .2LS	2.0000	EA		B	3767	08-07-96		
4	521932	CAP. 100 PF COG 200V	1.0000	EA		B	3767	08-07-96		
4	521962	CAP. NPO 10pf 200V .2LS	2.0000	EA		B	3767	08-07-96		
4	514612	POT. 50K 25T 1/2W 10%	1.0000	EA		B	3767	08-07-96		
4	514242	POT. 25K OHM 25T 1/2W 10%	1.0000	EA		B	3767	08-07-96		
4	514622	POT. 100K 25T 1/2W 10%	1.0000	EA		B	3767	08-07-96		
4	574922	CONN. HDR AMP STRAIGHT 3	1.0000	EA		B	3767	08-07-96		
4	LDN100/03	SEE EXTENDED DESCRIPTION	7.0000	EA		B P				
4	574432	SOCKET 40 POS DIP .5HT EL	1.0000	EA		B	3767	08-07-96		
4	LDN100/04	SEE EXTENDED DESCRIPTION	6.0000	EA		B P				

BOM Number : DN#988 - IRCON INFRARAIL IRT

SO-LI: 70314*1

Level	Part Number	Description	Quantity	UM	Alt.	MB X	ECO No.	ECO Date	StartUse	End Use.
4	526002	CAP. SMC 330PF NPO 50V 5%	1.0000	EA		B	3767	08-07-96		
4	572732	HEADER SNGL 36 PIN .1 CNT	11.0000	EA		B	3767	08-07-96		
4	LDN100/05	SEE EXTENDED DESCRIPTION	3.0000	EA		B P				
2	C11193	PCB INTERCONNECT ASSEMBLY	1.0000	EA		M P	3671	04-08-96		
3	LDN300	PCB INTERCONN ASSY (INFRA	1.0000	EA		M P				
4	502533	PCB DIN RAIL POWER PEAK-P	1.0000	EA		B	3721	08-01-96		
4	575922	CONN. FEMALE 11 POSITION	2.0000	EA		B	3721	08-01-96		
2	477112	LABEL, COVER, DIN BOX	1.0000	EA		B	3671	04-08-96		
2	C11190	DECAY RATE POT/ CONNECTOR	1.0000	EA		M P	3671	04-08-96		
3	LDN003	DECAY RATE POT/ CONN. ASS	1.0000	EA		M P	4030	10-08-97		
4	514592	POT. 50K OHM 1T 1/2W 10%	1.0000	EA		B				
4	LDN003/01	SEE EXTENDED DESCRIPTION	4.0000	EA		B P				
4	302479000	WIRE 24AWG VIO/WHITE STRA	1.0000	IN		B				
4	302409000	WIRE 24AWG BLK/WHITE STRA	1.0000	IN		B				
4	302459000	WIRE 24AWG GRN/WHITE STRA	1.0000	IN		B				
4	574662	CONN. CONTACT 20-24 AWG C	3.0000	EA		B				
4	574692	CONN. HOUSING 5 POSITION	1.0000	EA		B				
2	C11189	RESPONSE TIME POT/ CONN	1.0000	EA		M P	3671	04-08-96		
3	LDN002	RESP. TIME POT/ CONN. ASS	1.0000	EA		M P				
4	514602	POT. 5M OHM 1T 1/2W 10% P	1.0000	EA		B				
4	302440000	WIRE 24AWG YEL/BLACK STRA	1.0000	IN		B				
4	302460000	WIRE 24AWG BLU/BLACK STRA	1.0000	IN		B				
4	302430000	WIRE 24AWG ORG/BLACK STRA	1.0000	IN		B				
4	574662	CONN. CONTACT 20-24 AWG C	3.0000	EA		B				
4	574682	CONN. HOUSING 4 POSITION	1.0000	EA		B				
2	C11188	EMISSIVITY POT/ CONNECTOR	1.0000	EA		M P	3671	04-08-96		
3	LDN001	EMISSIVITY POT/ CONN. ASS	1.0000	EA		M P	3767	08-07-96		
4	513722	POT. 100K 2 DIGIT 1% DIGI	1.0000	EA		B	3767	08-07-96		
4	30245X000	WIRE 24AWG GREEN STRANDED	1.0000	IN		B	3767	08-07-96		
4	30249X000	WIRE 24AWG WHITE STRANDED	1.0000	IN		B	3767	08-07-96		
4	30246X000	WIRE 24AWG BLUE STRANDED	1.0000	IN		B	3767	08-07-96		
4	574662	CONN. CONTACT 20-24 AWG C	3.0000	EA		B	3767	08-07-96		
4	574672	CONN. HOUSING 3 POSITION	1.0000	EA		B	3767	08-07-96		
4	477212	LABEL - CLEAR WINDOW	1.0000	EA		B	3767	08-07-96		
2	575852	KNOB, 9MM COLLET TYPE,	2.0000	EA		B	3671	04-08-96		
2	575872	POINTER, 9MM COLLET TYPE	2.0000	EA		B	3671	04-08-96		
2	575862	CAP. 9MM COLLET TYPE KNOB	2.0000	EA		B	3671	04-08-96		
2	C11194	MODULE ASSEMBLY - M1 - (I	1.0000	EA		M P	3671	04-08-96		
3	573912	HEADER 40 PIN DIP .6 CENT	1.0000	EA		B				
3	T-C11194-1	SELECT "M1" MODULE VALUES	1.0000	EA		B				
3	T-C11194-3	GT M1 MODULE VALUES	1.0000	EA		B				
2	575912	CONN. KEYING ELEMENT (DN-	2.0000	EA		B	3671	04-08-96		
2	477132	LABEL, SERIAL NUMBER, DIN	1.0000	EA		B	3671	04-08-96		
2	477122	LABEL, DIN BOX, INFRARAIL	1.0000	EA		B	3671	04-08-96		
2	574082	TERM. BLOCK JUMPER QUICK	1.0000	EA		B	3671	04-08-96		
2	LDNKIT	MTG CLIP KIT FOR INFRARAI	1.0000	EA		M P	3671	04-08-96		
3	990300010	CLIP MTG FOR DIN BOX	2.0000	EA		B	3694	04-17-96		
3	LDNKIT/01	SEE EXTENDED DESCRIPTION	6.0000	EA		B P				
2	477182	LABEL-CE MARK (PRODUCTS)	1.0000	EA		B	3671	04-08-96		
1	C11207	DETECTOR ASSY (1.6 MICRON	1.0000	EA		M P				
2	LDN106	SH DETECTOR ASSY 1.6U S-S	1.0000	EA		M P	3681	04-08-96		

Acknowledgment



IRCON, INC.
7300 N. Natchez Ave.
Niles, IL 60714 USA

Phone 847-967-5151
Toll Free 800-323-7660
Fax 847-647-0948

SOLD TO _____ CUSTOMER NO. 008241

IRCON GMBH
POSTFACH 1361, D-65221
GRILLPARZERS
TAUNUSSTEIN,
GERMANY

SHIPPING ADDRESS _____ TAX CODE _____

INTROPA
SPEDITIONSGESELLSCHAFT GM
FRANKFURT AIRPORT
ZUR VERGUEGUNG IRCONGMBH
FRANKFURT,
GERMANY

REQUEST DATE (MM-DD-YY) 10-15-99 PROMISE DATE (MM-DD-YY) 10-15-99

OUR ORDER NO. 71865 ORDER DATE (MM-DD-YY) 10-01-99

YOUR ORDER NO. D-6865

TERMS 0.00/0/60

F.O.B. ORIGIN

CODE 1057 (100.00)

VIA MSAS

SPECIAL SHIPPING INSTRUCTIONS

LI	PART NO.	DESCRIPTION	QTY	DSCNT%	UNIT PRICE	AMOUNT
1	DN#2628 <i>W.O. 3055</i>	DN_DNS05-08C IRCON INFRARAIL IRT SYSTEM-COMPLETE Consists of the following: 1.0000 - INFRARAIL 1.0000 - DN - S SERIES 1.0000 - P1-LENS (L12021) 1.0000 - Std Cbl Lgth 4 meters. 12ft 1.0000 - D/50 1.0000 - 375 TO 800C DN_DNS05-08C	1	0.00	1683.00	1683.00
2	MOD-CHARGES	MODIFICATION OF PRODUCT	1	0.00	93.50	93.50
3	M3#2629	M3_36-06C15-0-0-0-0 IRCON MODLINE 3 IRT SYSTEM-COMPLETE	1	0.00	3898.95	3898.95
					GRAND TOTAL	

99C

*Redo Special No R724 - Long
range 400-900C +
cable break alarm*

HAB 10/14

THIS ORDER IS ACCEPTED SUBJECT TO TERMS AND CONDITIONS SHOWN ON THIS AND THE REVERSE SIDE

SHIP TO: IRCON, INC.
7300 N. NATCHEZ AVE.
NILES, IL 60714 USA

IF TAX EXEMPT, PLEASE PROVIDE COPY OF
EXEMPTION OR DIRECT PAYMENT CERTIFICATE.

Acknowledgment



IRCON, INC.
7300 N. Natchez Ave.
Niles, IL 60714 USA

Phone 847-967-5151
Toll Free 800-323-7660
Fax 847-647-0948

REQUEST DATE (MM-DD-YY) 04-30-99 PROMISE DATE (MM-DD-YY) 04-30-99

OUR ORDER NO. 70314 ORDER DATE (MM-DD-YY) 04-20-99

YOUR ORDER NO. D-6664

TERMS 0.00/0/60

F.O.B. ORIGIN

CODE 1057 (100.00)

VIA MSAS

SPECIAL SHIPPING INSTRUCTIONS

New Special

SOLD TO CUSTOMER NO. 008241

IRCON GMBH
POSTFACH 1361, D-65221
GRILLPARZERS
TAUNUSSTEIN,
GERMANY

SHIPPING ADDRESS TAX CODE

INTROPA
SPEDITIONSGESELLSCHAFT GM
FRANKFURT AIRPORT
ZUR VERGUEGUNG IRCONGMBH
FRANKFURT,
GERMANY

LI	PART NO.	DESCRIPTION	QTY	DSCNT%	UNIT PRICE	AMOUNT
1	DN#988 <i>Wp. 1346</i>	DN_DNS05-08C IRCON INFRARAIL IRT SYSTEM-COMLETE <i>99C</i> Consists of the following: 1.0000 - INFRARAIL 1.0000 - DN - S SERIES 1.0000 - P1-LENS (L12021) 1.0000 - SELECT METER 1.0000 - D/50 1.0000 - 375 TO 800C DN_DNS05-08C	4	0.00	1602.00	6408.00
						GRAND TOTAL

Redo Special to R 741
Spec Temp range of 400 - 900C R610
and cable break alarm
RAB 4/20
Qty Change \$650/lot

THIS ORDER IS ACCEPTED SUBJECT TO TERMS AND CONDITIONS SHOWN ON THIS AND THE REVERSE SIDE

SHIP TO: IRCON, INC.
7300 N. NATCHEZ AVE.
NILES, IL 60714 USA

IF TAX EXEMPT, PLEASE PROVIDE COPY OF EXEMPTION OR DIRECT PAYMENT CERTIFICATE.