



TIL 30A248
DATE: 11 JUNE 2013

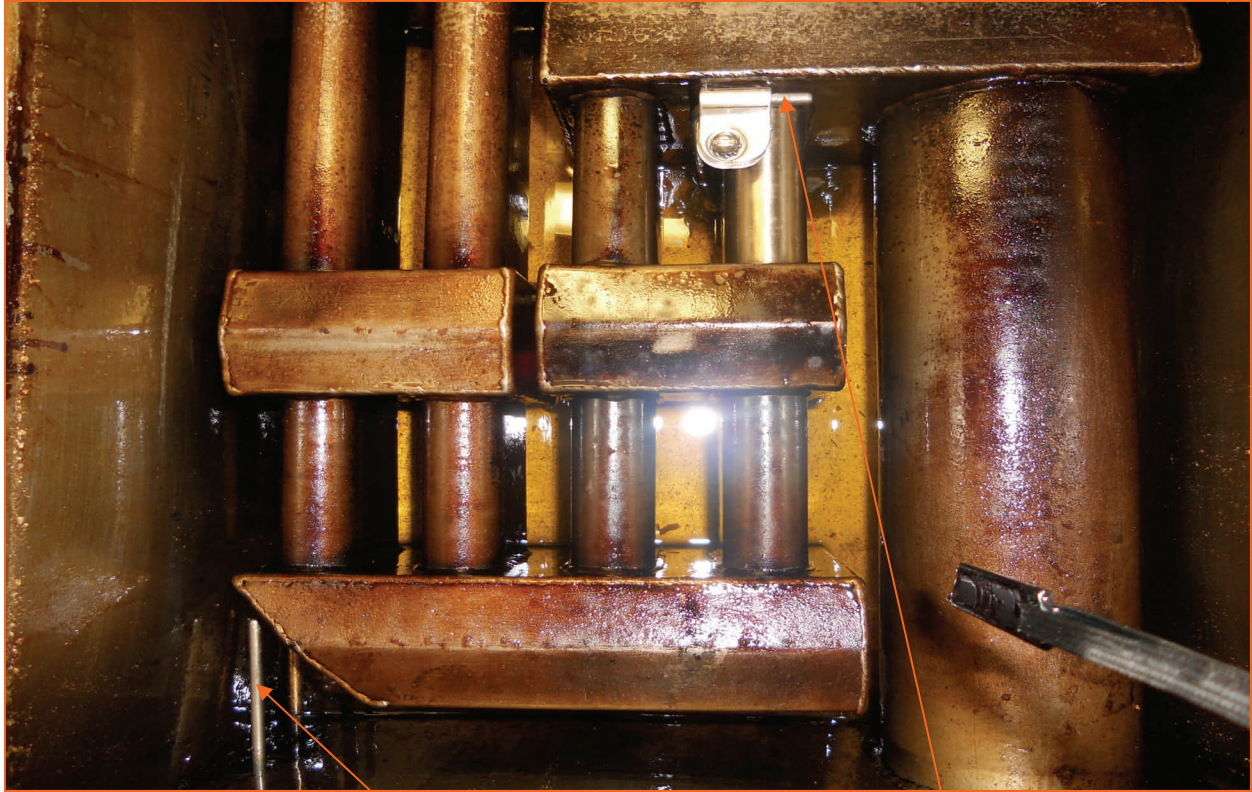
**OPERATIONS INSTRUCTIONS
SENSITIVE PROBE
FOR PA -14"**





DESCRIPTION: The sensitive probe is a 91K thermistor with quicker response capabilities. It is 3/16" dia., 7 3/4" long with a 90° bend 1 5/8" without a jacket. The probe is mounted from the bottom center of the vat with a compression fitting to seal off any oil leakage, and mounted to a bracket (as shown above) to keep the probe in place during cooking or cleaning. The probe is extended past the edge of the bracket a minimum of 3/8". This is necessary to keep the sensing portion of the probe exposed to the heat of the oil and PARALLEL to the plenum box.

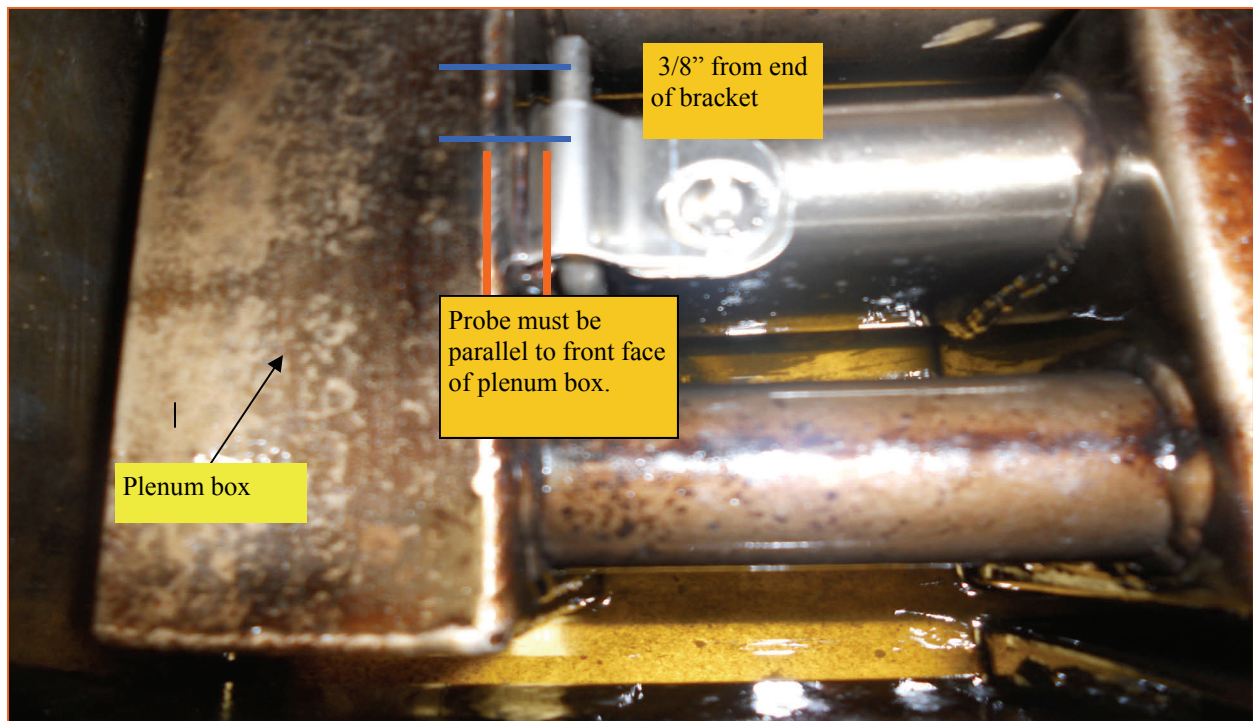
PURPOSE: The probe was developed to control the PA-14" fryer from excessively overshooting the oil temperature during ramp up and idling, when using the E5 On/Off controller in conjunction with DTMR.



**Location Std Probe
For Computer
Controller**

**Location Sensitive
Probe for On/Off
Controller**

HOW IT WORKS: The sensitive probe is basically the same type of temperature probe (a 91K thermistor) as our Std probe which is located (as you face the front of the vat) in the LH corner of the vat. With the Std probe and computer controller, algorithms in the computer interpret the probe curves and apply heat in varying amounts to achieve the desired temperatures. The On/Off controller can only switch the heat off, so it's probe must quickly sense the temperature to turn off before too much heat is supplied by the fryer. With the E5 On/Off controller, the fryer goes into the melt mode. Once you exit the melt mode, the fryer will turn on and ramp up until the oil reaches a temperature within 5° to 10° of the set point (located on the dial indicator). The quicker responding probe nearer the heat source allows the desired operation to better control the overshoot during ramp up and idle.



REPLACEMENT & INSTALLATION:

Should the probe need to be replaced follow these steps:

1. Turn off the fryer and drain the vat of oil. (Allow the vat to cool)
2. Loosen the screw on top of the bracket. Slide probe from under bracket,
3. Turn the probe 90° so the probe can clear the heat exchanger and drop to the bottom of the vat once you've loosened the compression fitting.
4. Loosen the compression fitting on the outside bottom of the vat, allow the probe to drop. When the 90° portion of the probe comes to the bottom of the vat, turn the probe so the 90° portion is vertical and slide the probe out.
5. When installing a new probe, you must replace the compression fitting portion on the probe.
6. Lower the new probe from the top of the vat (first remove the two pin connector) sliding the probe wires through the fitting at the bottom and place the probe back into the bracket making sure the tip of the probe is at least 3/8" from the edge of the bracket and parallel to the plenum box (as shown).

CAUTION: Be sure the end of the probe is NOT touching the plenum box.

7. Tighten the bracket to hold the probe, slide a new compression fitting onto the probe and tighten the fitting to the coupling welded to the bottom of the vat.
8. Reconnect the probe wires to the two pin connector and then to the controller two pin connector .
9. Refill the vat to the desired level, and turn on the fryer.

1		2		3		4		5	
TABLE 1					TABLE 2				
PART ITEM #	FROM A	FROM B	FROM C	FROM D	NOTES:	CUSTOMER ITEM#			
P91K-10042501	N/A	N/A	N/A	N/A	ALL	TBD			

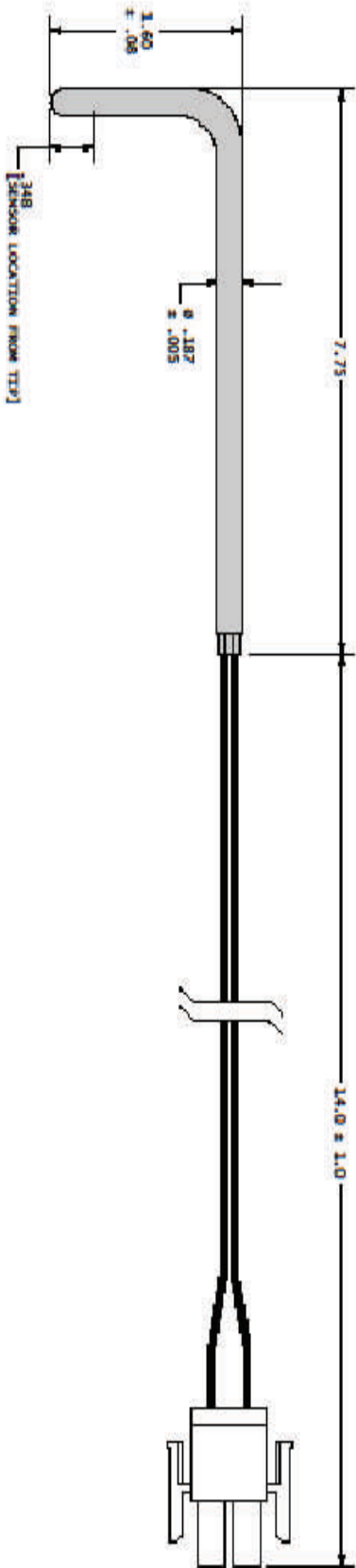


TABLE 3 ET-9 INC-2N-138 (P40-2007)

°C	Ω	°C	Ω	°C	Ω	°C	Ω
93	7580	120	2705	165	1202		
94	7563	130	2725	166	1176		
95	7148	131	2617	167	1151		
96	6936	132	2591	168	1127		
97	6732	133	2577	169	1103		
98	6535	134	2465	170	1080		
99	6345	135	2405	171	1057		
100	6162	136	2346	172	1035		
101	5985	137	2289	173	1014		
102	5814	138	2234	174	992		
103	5648	139	2180	175	972		
104	5488	140	2128	176	953		
105	5334	141	2077	177	933		
106	5184	142	2028	178	914		
107	5029	143	1980	179	896		
108	4880	144	1934	180	878		
109	4734	145	1888	181	860		
110	4593	146	1844	182	843		
111	4456	147	1802	183	826		
112	4323	148	1760	184	810		
113	4194	149	1720	185	794		
114	4100	150	1680	186	778		
115	4008	151	1642	187	763		
116	3930	152	1605	188	746		
117	3825	153	1568	189	734		
118	3724	154	1533	190	720		
119	3628	155	1499	191	706		
120	3531	156	1465	192	692		
121	3438	157	1433	193	679		
122	3340	158	1401	194	666		
123	3242	159	1370	195	654		
124	3148	160	1340	196	641		
125	3057	161	1311	197	629		
126	2966	162	1283	198	617		
127	2877	163	1255	199	606		
128		164	1228	200	596		

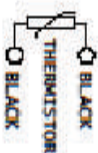
NOTES:
1) SENSOR: NTC THERMISTOR, SEE TABLE 3 FOR PARTIAL R. VS. T CHART
2) SENSOR ACCURACY AT TEST POINTS:

32" F - ± 10K
75" F - ± 10K
175" F - ± 2K
300" F - ± 2K
350" F - ± 2K
400" F - ± 3.2K

- 2) SHEATH: SS304/316, PLASMA WELDED CLOSED ONE END, COMMERCIAL GRADE FINISH
- 3) CONSTRUCTION: PRESSURE COLLET GRIP OVER TEFLON PLUG FOR STRAIN RELIEF / MOISTURE RESISTANCE
- 4) LEADS: (2) 22 AWG, SILVER PLATED COPPER, 7/30 STRANDS, BLACK TEFLON[®] INSULATED, TYPE 'E'
- 5) TERMINATION, CONNECTOR: PUT # C-1068, EQUAL TO AMP # 1-480698-0
- 6) TERMINATION, TERMINALS: (2) PUT # C-1078, EQUAL TO AMP # 350690-1
- OPERATING TEMPERATURE: -50° C TO +260° C (TIP OF SHEATH), +200° C (LEADS)

CERTIFICATE
OF
COMPLIANCE

The undersigned hereby
certifies that the
above information is
true and correct.



WIRING DIAGRAM

QUOTE #: 012042501, SAMPLE DATE: TBD		DRAWING #:		REV:	
CUSTOMER: ULTRAFREYER SYSTEMS		P91K-105		X1	
APPROVED:					
This drawing is the intellectual property of Probes Unlimited, Inc. and is not to be reproduced without written permission. Probes Unlimited, Inc. is not responsible for any errors or omissions. All dimensions are in inches. UNLESS OTHERWISE SPECIFIED.		Probes Unlimited, Inc. 856 W. 6th Street Lancaster, PA 17604 www.probesunlimited.com info@probesunlimited.com		X.00" = 0.12" X.000" = 0.001" ANGLES = 0.1°	