LL4
LL7
LL7H

INSTRUCTIONS

Liquid Level Controllers Models LL4 and LL7 are suitable for use in solutions having conductivity of 15 microSiemens/cm or greater. For solutions having conductivity between 20 microSiemens and one microSiemen, the high sensitivity Model LL7-H should be used.

1. If not purchased in an enclosure, the controller should be mounted in a panel or other protective enclosure in accordance with local electrical codes.

2. Wiring instructions for a variety of functions are given overleaf, drawing N104-12.

   Stainless steel electrodes and a variety of electrode holders are available from your local distributor or directly from AquaMetrix Inc.

   Four conductor interconnect cable dressed both ends is available from AquaMetrix Inc. Order Part No. A42-8 and specify length required. Maximum distance between tank and controller is 300 metres.

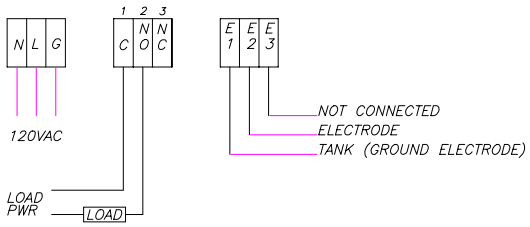
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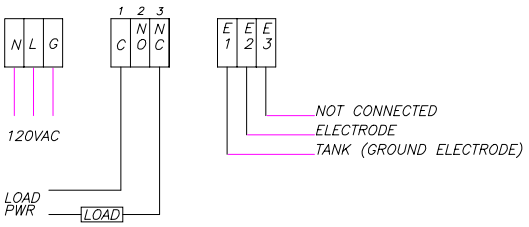
LL4

SINGLE LEVEL SERVICE
HIGH ALARM OR LOW LEVEL CUTOFF



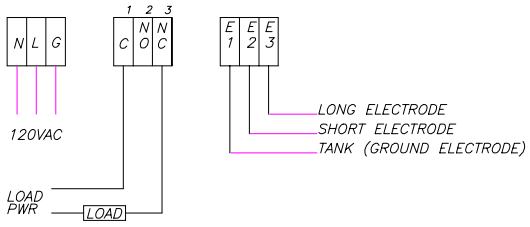
NORMALLY OPEN LOAD CONTACT 1–2 CLOSE WHEN LIQUID REACHES ELECTRODE AND OPEN WHEN LIQUID FALLS BELOW ELECTRODE.
CONNECT E1 TO TANK IF METALLIC AND GROUNDED. FOR UNGROUNDED TANK CONNECT A SECOND ELECTRODE, WHICH MUST ALWAYS BE IMMERSED IN LIQUID TO E1.

SINGLE LEVEL SERVICE
LOW ALARM OR HIGH LEVEL CUTOFF



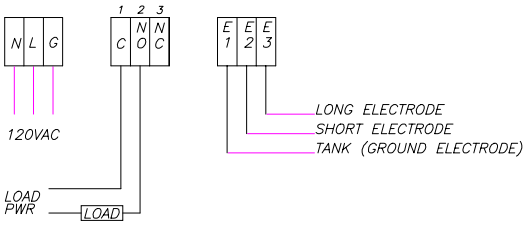
NORMALLY CLOSED CONTACT 1–3 OPEN WHEN LIQUID REACHES ELECTRODE AND CLOSE WHEN LIQUID FALLS BELOW ELECTRODE.
CONNECT E1 TO TANK IF METALLIC AND GROUNDED. FOR UNGROUNDED TANK CONNECT A SECOND ELECTRODE, WHICH MUST ALWAYS BE IMMERSED IN LIQUID TO E1.

DIFFERENTIAL LEVEL SERVICE
PUMP UP



NORMALLY CLOSED CONTACTS 1–3 OPEN WHEN LIQUID RISES TO SHORT ELECTRODE CONNECTED TO E2 AND CLOSE WHEN LIQUID FALLS BELOW LONG ELECTRODE TO E3
CONNECT E1 TO TANK IF METALLIC AND GROUNDED. FOR UNGROUNDED TANK CONNECT A SECOND ELECTRODE, WHICH MUST ALWAYS BE IMMERSED IN LIQUID TO E1.

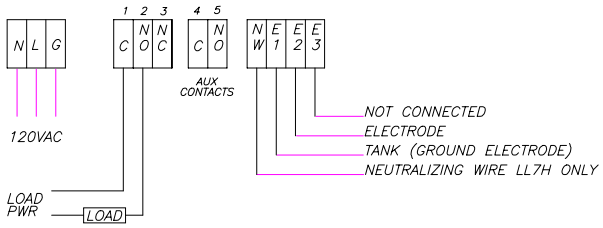
DIFFERENTIAL LEVEL SERVICE
PUMP DOWN



NORMALLY OPEN LOAD CONTACTS 1–2 CLOSE WHEN LIQUID RISES TO SHORT ELECTRODE CONNECTED TO E2 AND OPEN WHEN LIQUID FALLS BELOW LONG ELECTRODE TO E3
CONNECT E1 TO TANK IF METALLIC AND GROUNDED. FOR UNGROUNDED TANK CONNECT A SECOND ELECTRODE, WHICH MUST ALWAYS BE IMMERSED IN LIQUID TO E1.

LL7 & LL7H

SINGLE LEVEL SERVICE
HIGH ALARM OR LOW LEVEL CUTOFF

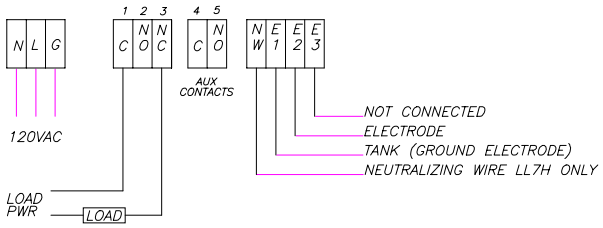


WHEN LIQUID REACHES THE ELECTRODE CONNECTED TO E2, NO CONTACTS 1–2 CLOSE AND NO AUX CONTACTS 4–5 CLOSE. WHEN LIQUID FALLS BELOW ELECTRODE. CONTACTS 1–2 AND 4–5 OPEN.

CONNECT E1 TO TANK IF METALLIC AND GROUNDED. FOR UNGROUNDED TANK CONNECT A SECOND ELECTRODE, WHICH MUST ALWAYS BE IMMERSED IN LIQUID TO E1.

LL7H ONLY
TERMINAL NW IS USED TO NEUTRALIZE THE CAPACITANCE EFFECT OF THE CABLE. IF THE CONTROLLER IS MORE THAN 20 METERS FROM THE TANK USE A 3 CONDUCTOR CABLE AND CONNECT ONE WIRE TO THE NW TERMINAL AND LEAVE UNCONNECTED AT THE TANK. DO NOT USE THE SHIELD FOR THIS PURPOSE.

SINGLE LEVEL SERVICE
LOW ALARM OR HIGH LEVEL CUTOFF

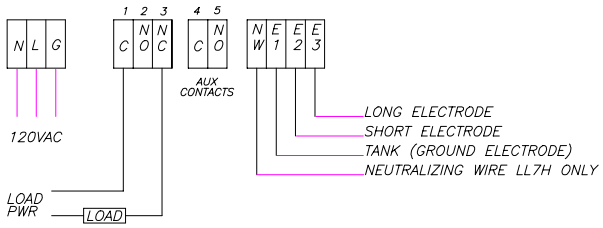


WHEN LIQUID REACHES THE ELECTRODE CONNECTED TO E2, NC CONTACTS 1–3 OPEN AND NO AUX CONTACTS 4–5 CLOSE. WHEN LIQUID FALLS BELOW ELECTRODE. CONTACTS 1–3 CLOSE AND 4–5 OPEN.

CONNECT E1 TO TANK IF METALLIC AND GROUNDED. FOR UNGROUNDED TANK CONNECT A SECOND ELECTRODE, WHICH MUST ALWAYS BE IMMERSED IN LIQUID TO E1.

LL7H ONLY
TERMINAL NW IS USED TO NEUTRALIZE THE CAPACITANCE EFFECT OF THE CABLE. IF THE CONTROLLER IS MORE THAN 20 METERS FROM THE TANK USE A 3 CONDUCTOR CABLE AND CONNECT ONE WIRE TO THE NW TERMINAL AND LEAVE UNCONNECTED AT THE TANK. DO NOT USE THE SHIELD FOR THIS PURPOSE.

DIFFERENTIAL LEVEL SERVICE
PUMP UP

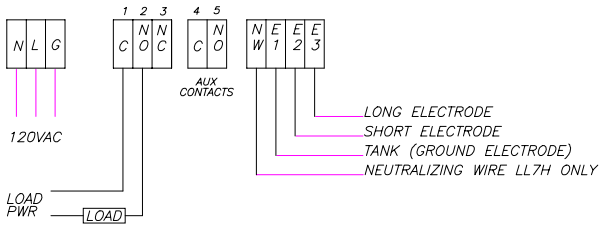


WHEN LIQUID RISES TO SHORT ELECTRODE CONNECT TO E2, NC CONTACTS 1–3 OPEN AND NO AUX CONTACTS 4–5 CLOSE. WHEN LIQUID FALLS BELOW LONG ELECTRODE. CONNECTED TO E3, CONTACTS 1–3 CLOSE AND 4–5 OPEN.

CONNECT E1 TO TANK IF METALLIC AND GROUNDED. FOR UNGROUNDED TANK CONNECT A SECOND ELECTRODE, WHICH MUST ALWAYS BE IMMERSED IN LIQUID TO E1.

LL7H ONLY
TERMINAL NW IS USED TO NEUTRALIZE THE CAPACITANCE EFFECT OF THE CABLE. IF THE CONTROLLER IS MORE THAN 20 METERS FROM THE TANK USE A 3 CONDUCTOR CABLE AND CONNECT ONE WIRE TO THE NW TERMINAL AND LEAVE UNCONNECTED AT THE TANK. DO NOT USE THE SHIELD FOR THIS PURPOSE.

DIFFERENTIAL LEVEL SERVICE
PUMP DOWN



WHEN LIQUID RISES TO SHORT ELECTRODE CONNECT TO E2, NO CONTACTS 1–2 CLOSE AND NO AUX CONTACTS 4–5 CLOSE. WHEN LIQUID FALLS BELOW LONG ELECTRODE. CONNECTED TO E3, CONTACTS 1–2 OPEN AND 4–5 OPEN.

CONNECT E1 TO TANK IF METALLIC AND GROUNDED. FOR UNGROUNDED TANK CONNECT A SECOND ELECTRODE, WHICH MUST ALWAYS BE IMMERSED IN LIQUID TO E1.

LL7H ONLY
TERMINAL NW IS USED TO NEUTRALIZE THE CAPACITANCE EFFECT OF THE CABLE. IF THE CONTROLLER IS MORE THAN 20 METERS FROM THE TANK USE A 3 CONDUCTOR CABLE AND CONNECT ONE WIRE TO THE NW TERMINAL AND LEAVE UNCONNECTED AT THE TANK. DO NOT USE THE SHIELD FOR THIS PURPOSE.

AquaMetrix Inc.
Industrial and Environmental Controls

WIRING DIAGRAM FOR LL4, LL7, AND LL7H
LIQUID LEVEL CONTROLLERS

CODE IDENT NO.	SIZE	DRAWING NO.	REV.
		N104–12	1
SCALE: NTS		SHEET 01 OF 01	