

TECHNICAL BULLETIN

ENVIRONMENTAL CONTROL UNIT (ECU) SOFTWARE UPGRADE

THE PRESENT TECHNICAL BULLETIN CONTAINS TECHNICAL INFORMATION AIMED TO SUPPORT/IMPROVE DRASS EQUIPMENT CURRENTLY IN OPERATION.

YOU ARE KINDLY REQUESTED TO:

- COMMUNICATE IF THIS DOCUMENT AND THOSE FOLLOWING SHOULD BE SENT TO DIFFERENT E-MAIL ADDRESSES.
- CONTACT DRASS FOR ANY CLARIFICATION NEEDED.
- INVOLVE DRASS FOR IMPLEMENTATION OF ANY SUGGESTED MODIFICATIONS.
- ALWAYS INFORM DRASS OF ANY MODIFICATION TO DRASS EQUIPMENT TO VERIFY SAFETY, ALLOW TRACEABILITY AND LIFE CYCLE SUPPORT.

PLEASE NOTE THAT TECHNICAL BULLETINS WILL BE AVAILABLE AT WWW.DRASS.IT FOR PERMANENT CONSULTATION.

REASON FOR ISSUE

THE MODIFICATIONS SUGGESTED ARE INTENDED TO IMPROVE THE LEVEL OF FUNCTIONING OF THE ENVIRONMENTAL CONTROL UNIT (ECU) & HMI AS PER THE FOLLOWING POINTS:

- A. IMPROVE CAPABILITY TO CONTROL DDC TEMPERATURE TO ONE TENTH OF A DEGREE.

- B. IMPROVE CAPABILITY FOR QUICK CONTROL OF THE ENVIRONMENT IN SHALLOW WATER CONDITIONS (WITH A DEDICATED BUTTON ON THE HMI).
- C. IMPROVE ABILITY FOR QUICK DEHUMIDIFICATION IN DDC (WITH A DEDICATED BUTTON ON THE HMI).
- D. IMPROVE ANALYSIS TOOLS SUCH AS TEMPERATURE AND HUMIDITY GRAPHS.

DESCRIPTION

- A. ON THE AUTOMATIC CONTROL PAGE THERE IS THE POSSIBILITY TO CONTROL THE TEMPERATURE OF THE DDC TO ONE TENTH OF A DEGREE (VIEW DETAIL A). WITH THIS IMPROVEMENT IT IS POSSIBLE TO INCREASE THE COMFORT IN THE CHAMBER DUE TO AN ACCURATE SETTING OF THE TEMPERATURE.

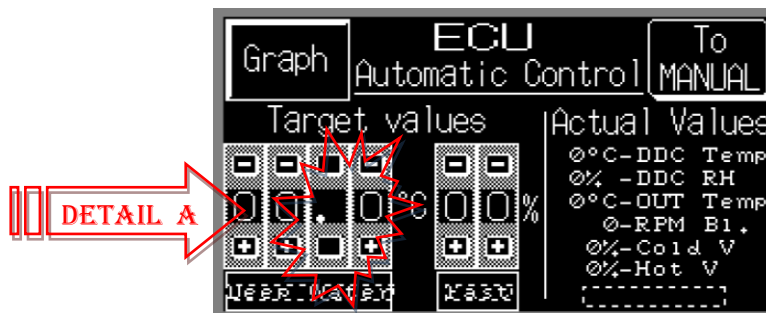


FIGURE 1

THE DISPLAY NOW SHOWS THE ACTUAL VALUE OF HOT AND COLD CONTROL LOOPS (%COLD V & %HOT V) [VIEW DETAIL B]. THIS HELPS THE OPERATOR TO UNDERSTAND WHETHER AND HOW THE CONTROL LOOPS ARE WORKING.

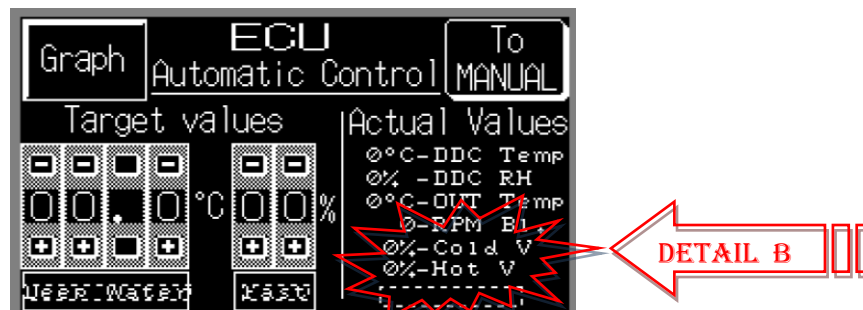


FIGURE 2

- B. IT GIVES THE CAPABILITY TO CONTROL THE ENVIRONMENT IN SHALLOW WATER CONDITION MORE QUICKLY (WITH A DEDICATED BUTTON ON THE HMI) [VIEW DETAIL C]. THIS BUTTON WILL LOAD CONTROL LOOP PARAMETERS TAKING INTO ACCOUNT IF THE

SYSTEM IS WORKING BETWEEN 0-100 MSW (SHALLOW WATER)
OR ABOVE 100MSW (DEEP WATER)

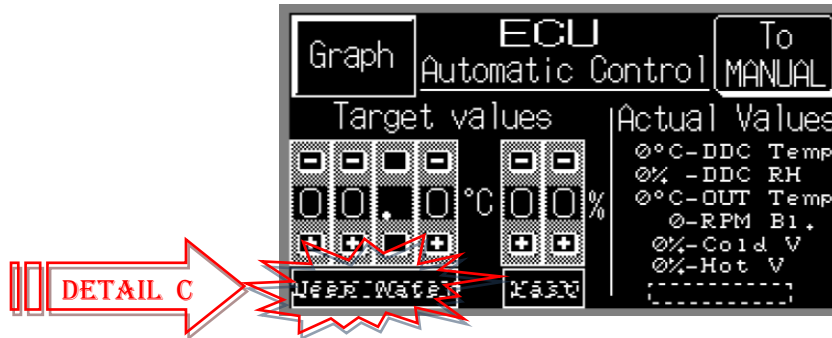


FIGURE 3

C. IMPROVE THE CAPABILITY FOR QUICK DEHUMIDIFICATION IN THE DDC (BY USING A DEDICATED BUTTON ON THE HMI) [VIEW DETAIL D]. WITH THIS FUNCTION THE OPERATOR CAN FORCE FAST DEHUMIDIFICATION: IN THIS CASE THE COLD CONTROL LOOP USES THE LOWER TEMPERATURE REACHABLE FOR DEHUMIDIFICATION AS A TARGET.

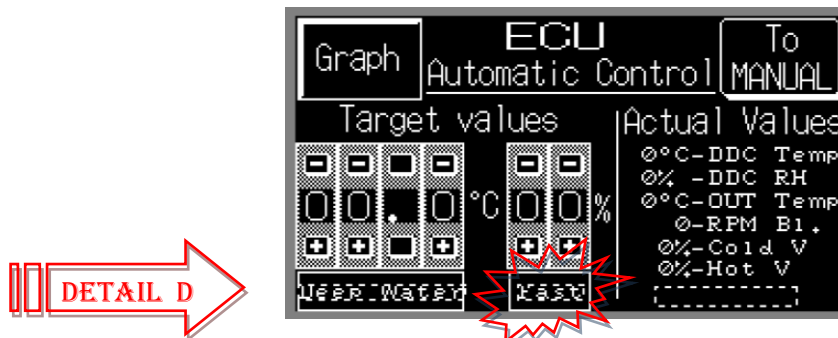


FIGURE 4

D. IMPROVE ANALYSIS TOOLS SUCH AS TEMPERATURE AND HUMIDITY GRAPHS. ACTING ON "GRAPH" BUTTON (VIEW DETAIL E) IT IS POSSIBLE TO DISPLAY THE GRAPHS OF TEMPERATURE AND HUMIDITY (FIG. 6 TO 8)

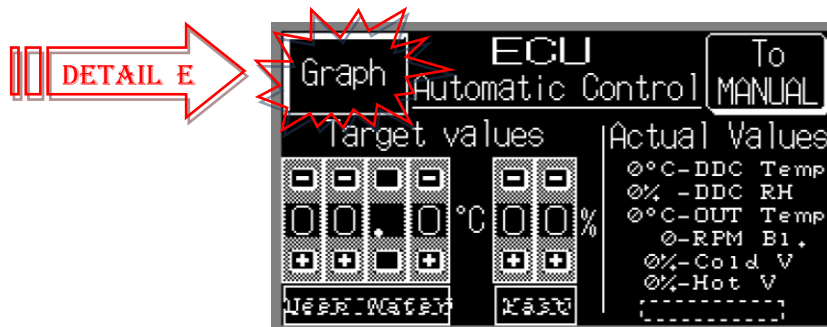


FIGURE 5

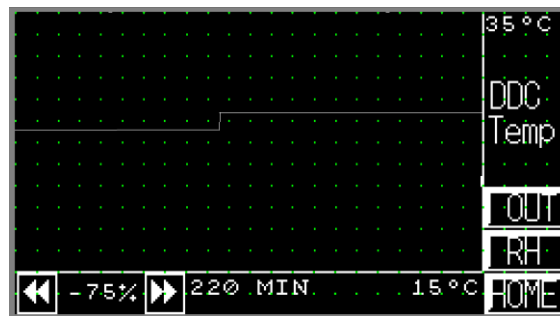


FIGURE 6

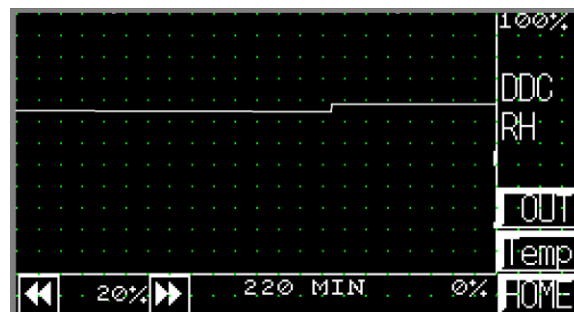


FIGURE 7

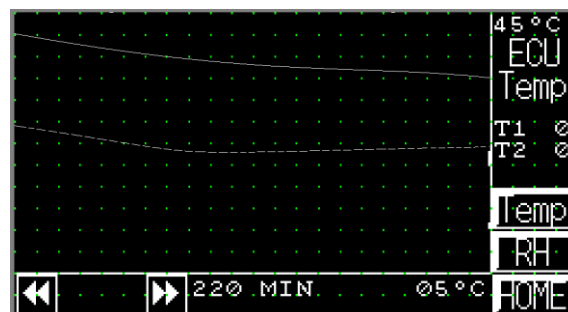


FIGURE 8

THE IMPROVEMENT CAN BE REQUESTED FROM MARTA.DALCANTO@DRASS.IT;
ADELINDA.BLAGA@DRASS.IT; PLEASE C.C. TO SALES@DRASS.IT WITH
"TECHNICAL BULLETIN ECU SOFTWARE UPGRADE AS THE SUBJECT.

RECOMMENDATIONS

1. USE ONLY DRASS ORIGINAL UPGRADE KIT
2. RECORD THE MODIFICATION IN THE DOCUMENTATION OF THE DIVING SYSTEM
3. REPORT THE EXECUTION OF THE IMPROVEMENT TO THE CLASS SURVEYOR DURING THE ANNUAL SURVEY AS PER OEM RECOMMENDATIONS