

INTISARI

Human Machine Interface (HMI) merupakan sistem perangkat lunak berupa Graphical User Interface (GUI) yang mewakili hubungan antara manusia dan teknologi mesin serta mempermudah manusia (operator) dalam pengoperasian mesin tersebut. HMI sendiri pada umumnya berupa layar monitor yang di dalamnya terdiri atas kontrol mesin seperti tombol ataupun visualisasi status seperti grafik, lampu dan lain-lain guna mengetahui keadaan proses kerja mesin. Sama seperti komputer, pengoperasian HMI menggunakan *keyboard* dan *mouse*, dan juga bisa berupa *touchscreen*. Pada penelitian ini, HMI dirancang untuk mesin cutting TSUNE TK5C-101GL menggunakan perangkat PLC GX Works2 dengan seri PLC QCPU Q00J dan GT Designer3 dengan seri GOT1000. Hasil pembuatan HMI berupa kontrol operasi mesin seperti setting auto dan manual mode, kontrol indikator komponen (input dan output), serta visualisasi riwayat alarm. Setelah itu, dilakukan pengujian indikator komponen dan pengujian alarm. Hasil dari pengujian tersebut disimpulkan bahwa kontrol indikator komponen bekerja dengan baik dan pengujian alarm bekerja dengan baik dan sesuai dengan realtime pada PC.

Kata kunci : HMI, PLC, mesin cutting, GX Works2, GT Designer3,

ABSTRACT

Human Machine Interface (HMI) is a software program that takes the form of a Graphical User Interface (GUI). It serves as a bridge between human and machine technologies and makes it easier for people (operators) to operate machines. The HMI itself typically takes the shape of a monitor screen, which displays machine controls like buttons or status visualizations like graphics, lights, and others to indicate the machine's current condition of operation. Just like a computer, HMI operation uses a keyboard and mouse, and can also be a touchscreen. In this study, the HMI was designed for the TSUNE TK5C-101GL cutting machine using the GX Works2 PLC with QCPU Q00J series and GT Designer3 with GOT1000 series. The results of making HMI in the form of machine operation controls such as setting auto and manual modes, control of component indicators (input and output), and visualization of alarm history. After that, testing of component indicators and testing of alarms is carried out. The test's findings showed that the component indicator control works well and the alarm test works well according to realtime on the PC.

Keywords : HMI, PLC, cutting machine, GX Works2, GT Designer3.