Settings (see Fig. 12.44):

The position of the plug-in jumper XJ1 on the PCB determines whether the unit's system alarm signals ("System defect" and "Stand-by" signals CHO01, CHO02) are operational or not. They must be in operation in the first O/P unit of a system.

- 216AB61/216AC61 (at rack division 12):
  XJ1 in position X4-X5 (active)
- Additional O/P units (from rack division 13 onwards):
  XJ1 in position X3-X4

The signalling channels are assigned to the activated protection functions (configuration) with the aid of the portable user interface (HMI) connected to the 216VC62a unit.

The analogue channels are assigned to variables measured by either an SCS or protection functions using the HMI (Function AC61). The scale of the O/P current range can be varied within ±400 % of its nominal range of 0...20 mA, the minimum and maximum percentages being set separately.

Example: Display of the measured value of a current function with a rated current In = 1 A.

Scale: Minimum = 0 %, Maximum = 200 %. The O/P of 0...20 mA corresponds to 0...2 A.

Example: Display of the measured value of a power function from -50 % to +150 % Pn.

Scale: Minimum = -50 %, Maximum = 150 %
0 mA corresponds to P = -50 %, 5 mA corresponds to P = 0 % and 20 mA corresponds to P = +150 %.

When displaying SCS measure variables, 100 % O/P current corresponds to a value of 160. The range of values is limited to ±320, i.e. the practical scaling value for SCS measured variables is ± 200 %.

2.5.6. Binary I/P and tripping unit 216DB61

The binary I/P and tripping unit comprises 16 I/P and 8 O/P channels. The O/P channels are used to transfer the tripping commands of activated protection functions to the 216GA62 tripping relay module (see also Section 2.6.3.). The I/P channels are used for external signals from the 216GE61 I/P relay module, which it transfers to the 216VC62a processing unit via the bus (see also Section 2.6.4.).

- connector "a" (upper) : I/P channels CHI01...CHI16
- connector "b" (lower) : channels CHO01...CHO08.

If there are several 216DB61 units in a system, the I/P and O/P channels are designated within the system according to Table 2.1.

The position of the plug-in jumper BR1 on the PCB of 216DB61 determines whether the "ENABLE" and "BLOCK CH OUT" functions are operational or not, i.e. whether the tripping channels CHO01...CHO08 are enabled or disabled. The enabling and blocking functions only concern the 216DB61 unit.

BR1 in position X4: (B/E inactive, see Fig. 5.21d)

The ENABLE 1/2 and BLOCK 1/2 functions are disabled. I/P channels CHI13...CHI16 function as normal external I/P's, i.e. the signals are transferred via the bus to the 216VC62a unit as in the case of channels CHI01...12.

BR1 in position X3: (B/E active)

The ENABLE 1/2 and BLOCK 1/2 functions are enabled.

The ENABLE 1 and 2 I/P's (CHI13 and CHI14) both have to be enabled (AND gate) for O/P channels CHO01...08 to be enabled.

In order to disable channels CHO01...08, a logical "1" must be applied to either the BLOCK 1 I/P or the BLOCK 2 I/P (CHI15 or CHI16; OR gate).

The tripping channels are also disabled, should a short-circuit occur in one of the tripping channel driving stages. Either channel group CHO01, 03, 05, 07 is disabled or channel group CHO02, 04, 06, 08, depending on in which group the short-circuit is.

Design

Figure 12.12 shows the front view of the binary I/P and tripping unit, which is a plug-in unit with a width of 1 standard division (1T). The internal auxiliary supply voltage is 5 V and is derived inside the unit from the 24 V auxiliary d.c. supply. The unit's main components are:

- a bus interface
- an I/P register
- an O/P register and O/P monitor
- O/P driver stages
- fault detector.

Frontplate signals and controls (see Fig. 12.12)

LED "AL" (red):

Alarm. Lights when the unit has an internal defect. See Section 6.1. for possible causes.

LED's "CH IN" (yellow):
01...12

I/P channels. Indicate which of the I/P's CHI01...CHI12 are energised.

LED's "ENABLE" (yellow):
1/2

BR1 in position X4: (B/E inactive)
Light when I/P's CHI13...CHI14 are energised.

Caution:

BR1 in position X3: (B/E active)
LED's 1 and 2 must be continuously lit during normal operation. (CH OUT enabled).

LED's "BLOCK" (yellow):
1/2

BR1 in position X4: (B/E inactive)
Light when I/P's CHI15...CHI16 are energised.

BR1 in position X3: (B/E active)
LED's 1 and 2 must not light during normal operation.
(CH OUT enabled)

LED's "CH OUT" (yellow):
01...08

Tripping signals. Light according to which of the channels CHO01...CHO08 are energised.

Settings (see Fig. 12.13)

The position of the plug-in jumper BR1 on the PCB determines whether the functions for enabling and disabling the tripping channels are in operation or not.

The tripping channels are assigned to the activated protection functions (configuration) with the aid of the portable user interface (PC) connected to the 216VC62a unit.

The earmarking of the various I/P's to be recorded as events is also performed via the HMI (binary inputs).

Refer to the set of specific plant diagrams for the configuration of the particular plant.