External input/output contact on your clock board

Almost on every our clock you can find 5 or 4 pins connector/contacts, which we use or reserve for the following functions:

io1, io2, io3 are potential input or output direct contacts from microcontroller, they are currently not in use and reserved for future use or SW custom modifications.

gnd is always clock ground contact and negative pole of power line.

tf (old name alT) is test frequency output contact together with ground contact are for checking your clock test frequency, which usually 200kHz or 400kHz. Please refer to How to calibrate your clock. document in **COMMON DOCUMENTS SECTION** on the KITS DOCS web page at www.kosbo.com

al.1 is External Alarm 1 contact. Most time it's TTL Log.0 low voltage (about +0.3V) direct output from microcontroller. Triggers for 1 minute to Log.1 (about +4.5V) in case Alarm1 happens.

al.2 is External Alarm 2 contact. Most time it's TTL Log.0 low voltage (about +0.3V) direct output from microcontroller. Triggers for 1 minute to Log.1 (about +4.5V) in case Alarm2 happens.

rx is serial interface Receive input contact to get data from PC/laptop or other device

tx is serial interface Transmit output contact to send data to PC/laptop or other device

X2 connector on your VFD Round clock:

Pin1 is io1 contact and currently not in use
Pin2 is io2 contact and currently not in use
Pin3 is tf contact, please see above paragraph
Pin4 is Ground contact and negative pole of power line
Pin5 is io3 contact and currently not in use

ICSP (In-circuit Serial programmer) is always 5 pins connector and for use in case you need to change/upgrade your clock's microcontroller software code:

Pin1 is MCLR. This contact always counts as first one and marked as mclr or thick white line.
Pin2 is PGD. This contact is for programming data and marked as dat or just second pin in the raw.
Pin3 is PGC. This contact is for programming clock and marked as clk or just third pin in the raw.
Pin4 is +5V. This contact is +5V power line and marked as "+" or just forth pin in the raw.
Pin5 is Ground. This contact is Ground and marked as "-" or just fifth pin in the raw.