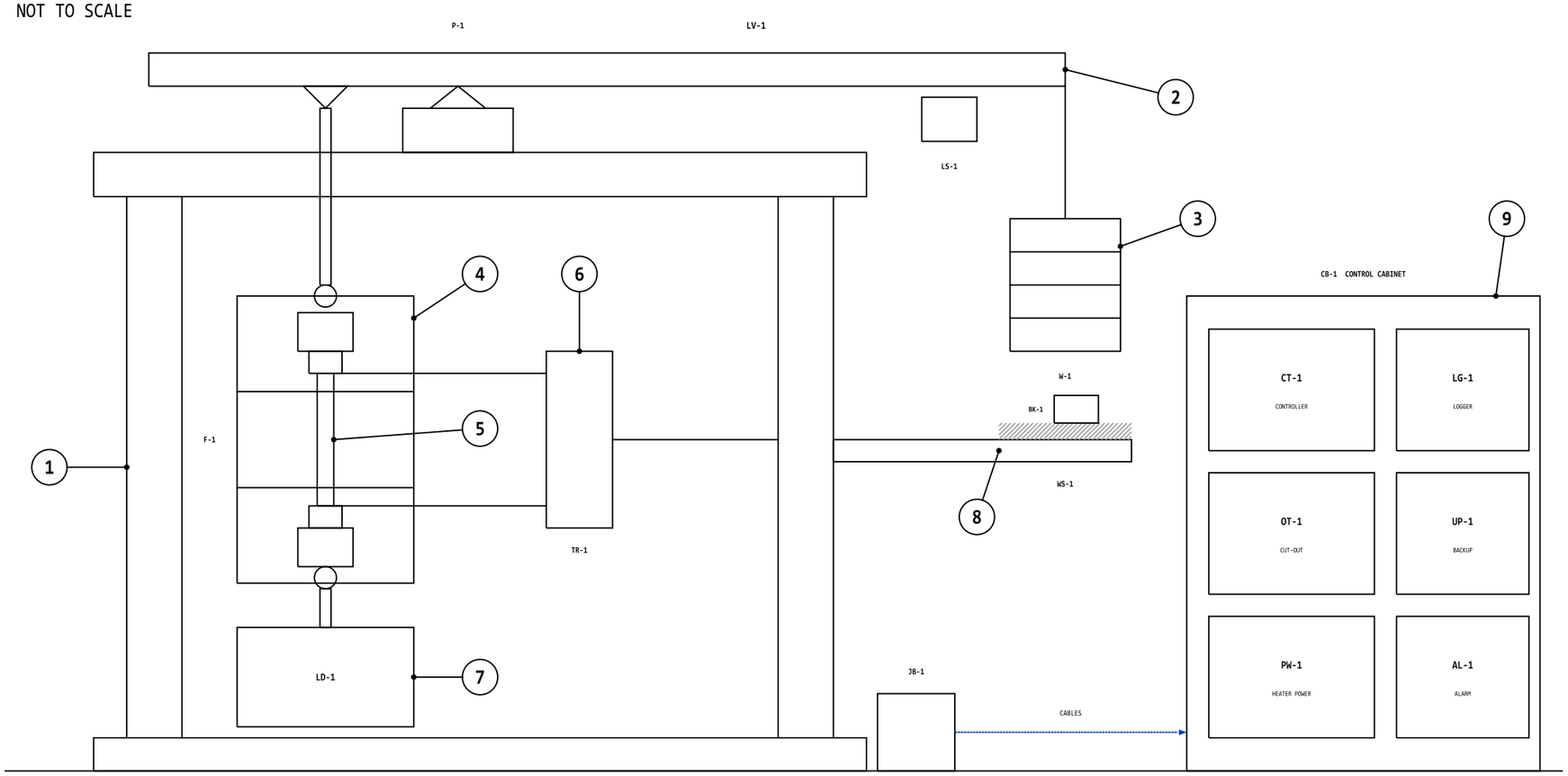
ELEVATION - CREEP FRAME

NOT TO SCALE



THE LEVER LV-1 CARRIES THE DEAD WEIGHTS W-1 AND PULLS THE SPECIMEN SP-1 THROUGH THE FURNACE F-1; THE LEVELLING DRIVE LD-1 HOLDS THE LEVER LEVEL, THE SENSOR LS-1 SEES ITS TILT, AND TR-1 READS THE STRETCH THROUGH RODS FROM THE SPECIMEN'S SHOULDERS
THE WEIGHT STOP WS-1 AND THE BREAK SWITCH BK-1 END THE TEST AT THE BREAK; THE CABLES RUN FROM THE JUNCTION BOX JB-1 TO THE CONTROL CABINET CB-1 (CONTROLLER CT-1, LOGGER LG-1, CUT-OUT OT-1, BACKUP UP-1, HEATER POWER PW-1, ALARM AL-1)

NOTES

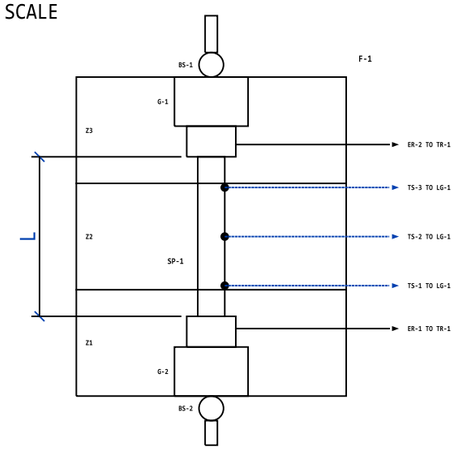
1. REFERENCE ARRANGEMENT OF A CREEP FRAME. LETTERS ARE DIMENSIONS SET BY DESIGN: NO TEMPERATURE, LOAD, STRESS, STRAIN, TIME OR SIZE VALUE IS GIVEN.
2. THE ELEVATION SHOWS THE LEVER LV-1 ON ITS PIVOT P-1 CARRYING THE DEAD WEIGHTS W-1, THE PULL ROD THROUGH THE FURNACE F-1 TO THE SPECIMEN SP-1, THE LEVELLING DRIVE LD-1, THE LEVEL SENSOR LS-1, THE TRANSDUCER TR-1, THE WEIGHT STOP WS-1 AND THE CONTROL CABINET CB-1.
3. DETAIL A: THE LOAD TRAIN AND SPECIMEN IN SECTION, WITH THE THREE ZONES Z1 TO Z3, THE THERMOCOUPLES TS-1 TO TS-3 AND THE EXTENSOMETER RODS ER-1 AND ER-2. DETAIL B: THE LEVER, LEVEL AND TILTED. DETAIL C: THE BREAK.
4. THE CIRCUITS AND THE CURVES ARE ON SHEET 002. THE TRANSDUCER, THE THERMOCOUPLES, THE FURNACE CONTROLLER, THE LOAD CELL AND THE LOGGER ARE CATALOGUE ITEMS, BOUGHT IN. GUARDS ROUND THE LEVER AND THE FURNACE ARE NOT SHOWN.

ITEMS

ITEM	DESCRIPTION
1	LOADING FRAME
2	LEVER ARM LV-1
3	DEAD WEIGHTS W-1
4	FURNACE F-1
5	SPECIMEN SP-1
6	TRANSDUCER TR-1
7	LEVELLING DRIVE LD-1
8	WEIGHT STOP WS-1, BK-1
9	CONTROL CABINET CB-1

DETAIL A - THE LOAD TRAIN AND SPECIMEN

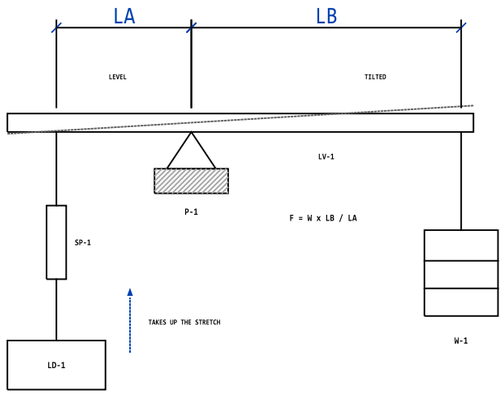
NOT TO SCALE



THE FURNACE HAS THREE ZONES, Z1 TO Z3, EACH WITH ITS OWN CONTROL;
THE THERMOCOUPLES TS-1 TO TS-3 ARE TIED TO THE GAUGE LENGTH L,
NOT TO THE FURNACE; THE RODS ER-1 AND ER-2 TOUCH THE SHOULDERS
AND CARRY THE STRETCH OUT TO THE TRANSDUCER TR-1

DETAIL B - THE LEVER AND ITS LEVELLING

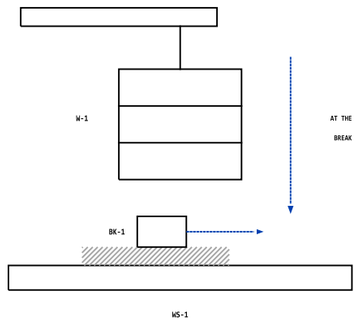
NOT TO SCALE



AS THE SPECIMEN STRETCHES THE LEVER TILTS (DASHED); THE LEVELLING DRIVE
LD-1 TAKES UP THE STRETCH AND BRINGS THE LEVER BACK TO LEVEL, SO THE PULL
STAYS WHAT WAS CHECKED; F = W x LB / LA IS THE PULL FOR A LEVEL LEVER

DETAIL C - THE BREAK

NOT TO SCALE



AT THE BREAK THE WEIGHTS FALL ONTO
THE STOP WS-1; THE BREAK SWITCH BK-1
STOPS THE CLOCK AND THE FURNACE

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED
ENGINEERED IN NOIDA - INDIA

CREEP TEST MACHINE - REFERENCE CONFIGURATION

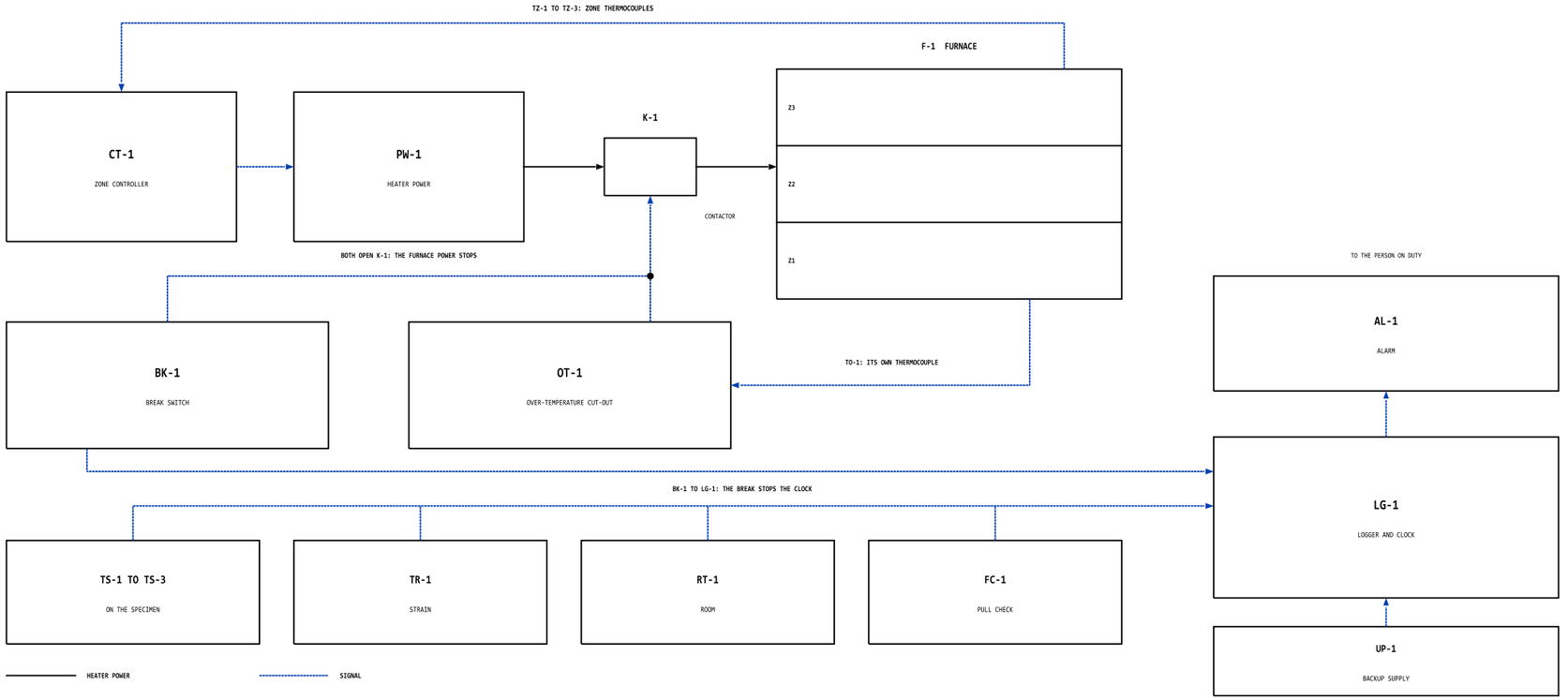
ARRANGEMENT AND DETAILS

THE FRAME, THE LEVER, THE FURNACE AND THE BREAK

DWG NO	SCALE @ A3	SHEET	REV
NMX-CRP-112-001	NTS	1 OF 2	A
DATE	UNITS	DRAWN	STATUS
19-11-2026	TAGS ONLY	NMX-DO	REFERENCE

HEAT, PROTECTION AND MEASUREMENT - CREEP FRAME

NOT TO SCALE



HEAT: THE CONTROLLER CT-1 DRIVES THE HEATER POWER PW-1 THROUGH THE CONTACTOR K-1 TO THE THREE ZONES OF THE FURNACE F-1, AND THE ZONE THERMOCOUPLES TZ-1 TO TZ-3 CLOSE THE LOOP; THE CUT-OUT OT-1, WITH ITS OWN THERMOCOUPLE TO-1, AND THE BREAK SWITCH BK-1 OPEN K-1

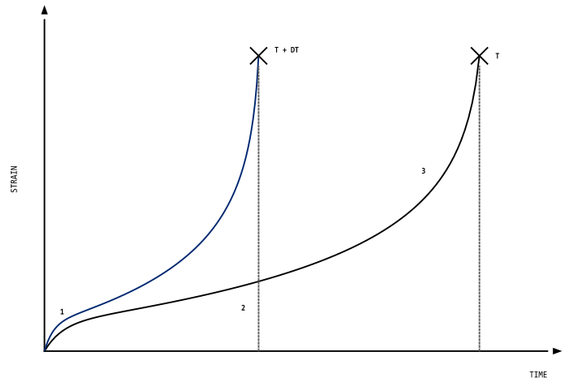
MEASUREMENT: THE LOGGER LG-1 KEEPS THE SPECIMEN THERMOCOUPLES TS-1 TO TS-3, THE STRAIN TR-1, THE ROOM RT-1, THE PULL CHECK FC-1 AND THE BREAK, ON ITS OWN BACKUP SUPPLY UP-1, AND RAISES THE ALARM AL-1

NOTES

1. REFERENCE CIRCUITS OF A CREEP FRAME. TAGS AND LETTERS ONLY: NO TEMPERATURE, LOAD, STRESS, STRAIN, TIME OR SIZE VALUE IS GIVEN.
2. HEAT AND PROTECTION: THE CONTROLLER CT-1 DRIVES THE HEATER POWER PW-1 THROUGH THE CONTACTOR K-1 TO THE THREE ZONES OF THE FURNACE F-1; THE ZONE THERMOCOUPLES TZ-1 TO TZ-3 CLOSE THE LOOP. THE CUT-OUT OT-1, WITH ITS OWN THERMOCOUPLE TO-1, AND THE BREAK SWITCH BK-1 OPEN K-1.
3. MEASUREMENT: THE LOGGER LG-1 RECORDS THE SPECIMEN THERMOCOUPLES TS-1 TO TS-3, THE STRAIN TR-1, THE ROOM RT-1, THE PULL CHECK FC-1 AND THE BREAK, AND KEEPS ITS CLOCK ON THE BACKUP SUPPLY UP-1 THROUGH A POWER CUT. THE ALARM AL-1 CALLS THE PERSON ON DUTY.
4. DETAILS A TO C ARE COMPUTED FROM A POWER LAW IN STRESS TIMES AN ARRHENIUS TERM IN TEMPERATURE, IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT. THE ARRANGEMENT IS ON SHEET 001.

DETAIL A - TWO TEMPERATURES, ONE CURVE

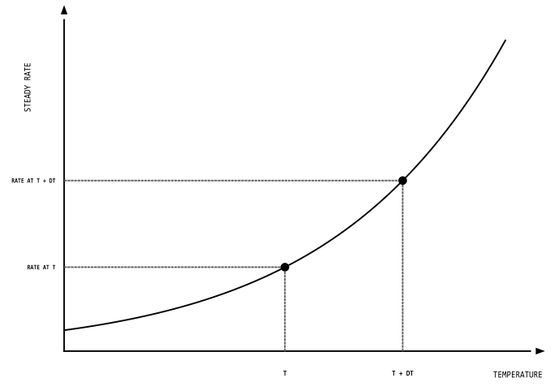
NOT TO SCALE - COMPUTED



THE SAME TEST AT T AND AT A SLIGHTLY HOTTER T + DT: THE HOTTER CURVE HAS THE SAME SHAPE RUN FASTER, SO ITS STEADY RATE IS HIGHER AND THE BREAK COMES SOONER; 1 IS THE FALLING RATE, 2 THE NEARLY STEADY RATE, 3 THE RISING RATE; COMPUTED FROM A POWER LAW IN STRESS AND AN ARRHENIUS TERM IN TEMPERATURE, IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT

DETAIL B - A SMALL STEP, A LARGE RATE

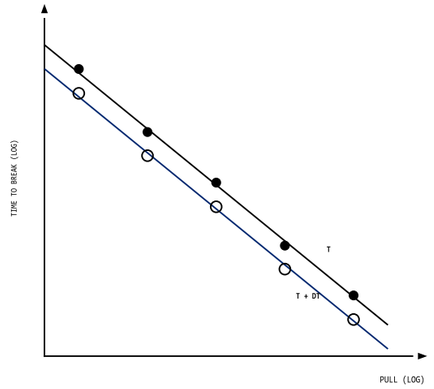
NOT TO SCALE - COMPUTED



THE STEADY CREEP RATE FOLLOWS A POWER LAW IN STRESS AND AN ARRHENIUS TERM IN TEMPERATURE, SO IT CLIMBS STEEPLY: A SMALL STEP IN TEMPERATURE, FROM T TO T + DT, IS A LARGE STEP IN RATE, AND A SPECIMEN THAT RUNS A LITTLE HOT CREEPS FAST AND BREAKS SOON; COMPUTED IN RELATIVE UNITS: A PICTURE OF THE IDEA, NOT A MEASUREMENT

DETAIL C - THE BANK'S POINTS

NOT TO SCALE - COMPUTED



EACH STATION OF A STRESS-RUPTURE BANK GIVES ONE POINT; THE POINTS FALL ON A LINE IN LOG AXES, AND A HOTTER BANK (T + DT) BREAKS SOONER AT EVERY PULL; COMPUTED: A PICTURE OF THE IDEA

REFERENCE CONFIGURATION - NOT FOR CONSTRUCTION

NEOMETRIX DEFENCE LIMITED

ENGINEERED IN NOIDA - INDIA

CREEP TEST MACHINE - REFERENCE CONFIGURATION

CIRCUITS AND CURVES

THE CIRCUITS AND THE CURVES OF THE IDEA

DWG NO	SCALE @ A3	SHEET	REV
NMX-CRP-112-002	NTS	2 OF 2	A
DATE	UNITS	DRAWN	STATUS
19-11-2026	TAGS ONLY	NMX-DO	REFERENCE