# Transformer Test System

## Questionnaire

Quotation number: _____
(Will be filled in by Samgor)

### Customer Information

Name: _____
Company: _____
Tel: _____
Email: _____
Placing location/Country: _____

## A. Technical Part

### Application

Test shop ☐ Research institute ☐ Mobile on-site ☐

### Test Objects

| | | | |
|---|---|---|---|
| Distribution transformers | ☐ | up to____MVA | up to____kV |
| Power transformers | ☐ | up to____MVA | up to____kV |
| Special transformers | ☐ | up to____MVA | up to____kV |

### Planned Tests

| | YES (√) | NO(×) | NOTE |
|---|---|---|---|
| Measurement of winding resistance | | | |
| Insulation resistance measurement | | | |
| C&tan delta measurement | | | |
| Measurement of transformer ratio | | | |
| Measurement of no load current and no load losses | | | |
| Measurement of short circuit impedance and load losses | | | |
| Applied voltage test | | | |
| Short time induced voltage test | | | |
| Long time induced voltage test | | | |
| Partial discharge measurement | | | |
| Tap changer test under load | | | |
| Temperature rise test | | | |
| Lightning impulse test | | | |
| Switching impulse test | | | |
| Radio interference measurement | | | |
| Transit characteristic measurement | | | |
| Noise level measurement | | | |

| | | | |
|---|---|---|---|
| Zero sequence test | | | |
| Cooling device test | | | |
| Bushing test | | | |
| Short circuit test | | | |
| Transformer oil test | | | |
| **Other:** | | | |
| | | | |
| | | | |

## General Data Of The Test Objects

| | | Single phase object | | Three phase object | |
|---|---|---|---|---|---|
| | | min | max | min | max |
| AC voltage class | kV | | | | |
| Rated power range | MVA | | | | |
| HV Voltage range | kV | | | | |
| LV Voltage range | kV | | | | |
| Short circuit impedance | % | | | | |

## Data Of The Largest Test Objects

| | | | Single phase 'largest' transformer | | Three phase 'largest' transformer | |
|---|---|---|---|---|---|---|
| AC voltage class | | kV | | | | |
| Rated power range | | MVA | | | | |
| Weight of iron core | | kg | | | | |
| | | | min | max | min | max |
| HV Voltage(Um) | | kV | | | | |
| LV Voltage(Um) | | kV | | | | |
| MV Voltage(Um) (if have) | | kV | | | | |
| Frequency | | Hz | | | | |
| Short-circuit impedance | | % | (HV) | (LV) | (HV) | (LV) |
| Load losses | | kW | | | | |
| Temperature-rise test | | kW | | | | |
| No-load Test | Test Voltage | kV | | | | |
| | Current | A | | | | |
| | Losses | kW | | | | |
| | 3rd harmonics | A | | | | |
| | 5rd harmonics | A | | | | |
| | 7rd harmonics | A | | | | |
| | 9rd harmonics | A | | | | |

| | | | | |
|---|---|---|---|---|
| Winding Capacitance | HV | nF | | |
| | LV | | | |
| | MV | | | |
| | HV-LV | | | |

***Please provide a selection of test reports and data sheets of all planned test objects.**

## Apply Voltage Test

Yes ☐ No ☐

If yes:

AC resonant test system ☐ AC test transformer system ☐

If have voltage/current suggestion, please mention:_____

_____

## Control

Basic manual control ☐

Computer-aided control and measuring ☐

## Power Measuring System

Yes ☐ No ☐

If yes:

Norma power analyzer ☐ Yokogawa power analyzer ☐

Dry type CT/PT ☐ Oil type CT/PT ☐

## Compensation Capacitor Bank

Yes ☐ No ☐

Low voltage ☐ High voltage ☐

Manual disconnectors ☐ Automatic disconnectors ☐

Capacitors with intern fuse ☐ Capacitors without intern fuse ☐

Bank with unbalance protection ☐ Bank without unbalance protection ☐

## Requirements Concerning the PD behavior of the AC test system

PD measuring system is required

Yes ☐ No ☐ PD level < …… pC up to …… kV

Shield test field exists Yes ☐ No ☐

Shield test field is required Yes ☐ No ☐

## Supply Conditions

| | Low voltage mains | Medium voltage mains |
|---|---|---|
| Mains voltage | ……/…… V | …… kV |
| Frequency Hz | | |
| Available power | | |
| Single-phase kVA | | |
| Three-phase kVA | | |
| Star point earthed | Yes ☐ No ☐ | Yes ☐ No ☐ |

## Test Field

| | | | |
|---|---|---|---|
| Layout(L*W*H),if application for test shop* | Test field | m*m*m | |
| | HV capacitor-bank | m*m*m | |
| Ambient conditions | Altitude above sea level | m | |
| | Min. ambient temperature | ℃ | |
| | Max. ambient temperature | ℃ | |
| | Relative humidity | % | |

*A drawing about the layout of the test field is preferred.

## Special Main Conditions/Restriction by Buildings:

_____

_____

## Operation of the Project:

Turn key ☐ Components ☐

*If you choose turn-key option, we are responsible for the whole system working. If you choose components option, we are responsible for each component working.

# B. Commercial Part

## Purpose of the Enquiry

Budget planning ☐ Standard quotation ☐ Tender ☐

## Quotation Required

Within 1 week ☐ Within 2 weeks ☐ Within 1 month ☐

## Binding Period of the Quotation

3 months ☐ Other:

## Delivery Base according to Incoterms 2010

EXW ☐ FOB ☐ CIF ☐

## Requested Delivery Period

……months after order

## Warranty Period Required

1 year ☐ 2 years ☐ 5 years ☐ Other:

## Space for Remarks

……

……

**For further information please contact:**

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