

# ISO 15548-1:2026-04 (E)

## Non-destructive testing - Equipment for eddy current examination - Part 1: Instrument characteristics and verification

---

<b>Contents</b>		<b>Page</b>
Foreword		v
Introduction		vi
<b>1</b>	<b>Scope</b>	<b>1</b>
<b>2</b>	<b>Normative references</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions</b>	<b>1</b>
<b>4</b>	<b>Eddy current instrument characteristics</b>	<b>2</b>
4.1	General characteristics	2
4.1.1	Type of instrument	2
4.1.2	Power supply	2
4.1.3	Safety	2
4.1.4	Technology	2
4.1.5	Physical presentation	2
4.1.6	Environmental effects	2
4.2	Electrical characteristics	3
4.2.1	General	3
4.2.2	Functional block diagram	3
4.2.3	Generator unit	3
4.2.4	Input stage characteristics	4
4.2.5	Balance	4
4.2.6	HF signal and demodulation	4
4.2.7	Demodulated signal processing	5
4.2.8	Signal output	6
4.2.9	Digital interface	7
4.2.10	Digitization and data resolution	7
<b>5</b>	<b>Verification</b>	<b>8</b>
5.1	General	8
5.2	Levels of verification	8
5.3	Verification procedure	9
5.4	Corrective actions	9
<b>6</b>	<b>Measurement of electrical characteristics of instrument</b>	<b>10</b>
6.1	Measuring requirements	10
6.2	Generator unit	10
6.2.1	Excitation frequency	10
6.2.2	Harmonic distortion	11
6.2.3	Differential source impedance	11
6.2.4	Maximum output voltage	12
6.2.5	Maximum output current	13
6.2.6	Output voltage	13
6.3	Input stage characteristics	14
6.3.1	Maximum allowable input voltage related to saturation and non-linearity	14
6.3.2	Input impedance	15
6.4	Balance	16
6.4.1	Maximum compensable input voltage	16
6.4.2	Residual output value at balance	17
6.5	Demodulation	17
6.5.1	Orthogonality of signal components	17
6.6	Demodulated signal processing	19
6.6.1	Gain accuracy and linearity	19

6.6.2	Phase-setting accuracy.....	20
6.6.3	Bandwidth.....	22
6.6.4	Cross-talk.....	25
6.6.5	Common-mode rejection.....	26
6.6.6	Maximum instruments noise.....	27
<b>Annex A (informative) Principle of frequency beat method.....</b>		<b>29</b>
<b>Annex B (informative) Method of evaluation of linearity range between output and input.....</b>		<b>31</b>
<b>Annex C (normative) Summary of characteristics and verification levels.....</b>		<b>33</b>