

TEMPERATURE MEASUREMENT

GU-TC Series

Thermocouple sensor assemblies

Controlled selection and configuration guidance for mineral-insulated, rigid/tube, base-metal and noble-metal thermocouple assemblies.



Representative industrial thermocouple assemblies

Illustrative visual only. The image is not a code-to-configuration map and does not establish a supplied assembly, dimensions, materials, ratings, connections, accessories or certification.

**Temperature measurement, engineered
for service.**

For GCC oil & gas, petrochemical, chemical, power and water-treatment selection discussions.

01 / Catalogue guide

Configure with control

A decision-useful guide to the GU-TC family. Selection is preliminary until the approved order data sheet, approved drawings and nameplate define the final supplied assembly.

Product at a glance

ID	Selection area	Catalogue guidance
01	Sensor type	K, J, T, E, N, R, S or B; simplex / duplex construction.
02	Junction	Grounded, insulated or exposed, selected to the application boundary.
03–06	Signal and primary protection	Tolerance class, IEC reference, cable identity and sheath / ceramic option.
07–14	Mechanical and documentation definition	Length, neck, head, connection, entry, transmitter, certification and X-field.

Configuration principle

The model code creates a traceable enquiry basis. It does not substitute for process conditions, thermowell design, hazardous-area selection, calibration scope or approved order documents.

In scope

mineral-insulated (MI) and rigid/tube thermocouple sensor assemblies, base-metal and noble-metal types, with the GU head / neck / process-connection / cable-entry / transmitter ecosystem shared with the GU-RT RTD line.

Excluded scope

thermowell mechanical design/wake-frequency calculation (cross-reference the thermowell datasheet/catalogue), extension/compensating cable supplied loose beyond the assembly boundary, and any application outside the published type/temperature envelopes without X-field engineering review.

Use this catalogue for

Product-family orientation, preliminary type selection, configuration logic, model-code traceability, inquiry definition and controlled document review.

Catalogue navigation

03–04 Type selection and standards · 05 Cable identity · 06 Construction and junctions · 07–09 Ordering system · 10 Gating rules · 11–12 Worked examples · 13 QA and project definition · 14 Quick-reference card.

02 / Thermocouple type selection

Select the thermocouple family first

The table shows IEC 60584-1 reference-function temperature spans, not universal continuous-service ratings. Actual sensor service is constrained by the ordered protection system, atmosphere, installation and approved order documentation. [1]

Type	Alloy pair (+ / -)	Reference span	Atmosphere / selection basis	Application note
K	Ni-Cr / Ni-Al	-270 to +1372 °C	Oxidising or inert, with atmosphere review	General industrial base-metal type.
N	Ni-Cr-Si / Ni-Si	-270 to +1300 °C	High-temperature oxidising / inert service	Enhanced stability alternative to K.
J	Fe / Cu-Ni	-210 to +1200 °C	Reducing, vacuum or inert service	Iron leg requires atmospheric control.
E	Ni-Cr / Cu-Ni	-270 to +1000 °C	Oxidising or inert service	High EMF output among standard base-metal types.
T	Cu / Cu-Ni	-270 to +400 °C	Low-temperature / moisture-tolerant service	Cryogenic and low-temperature selection.
R	Pt-13%Rh / Pt	-50 to +1768 °C	High-temperature oxidising / inert; ceramic primary protection	Noble-metal, high-temperature duty.
S	Pt-10%Rh / Pt	-50 to +1768 °C	High-temperature oxidising / inert; ceramic primary protection	Noble-metal, reference-oriented selection.
B	Pt-30%Rh / Pt-6%Rh	0 to +1820 °C	Highest-temperature service; ceramic primary protection	Use only with specialist high-temperature review.

Base-metal cautions

Type K may suffer green-rot drift in low-oxygen, elevated-temperature service. Type J iron-leg oxidation requires attention in air, particularly above approximately +540 °C. Confirm atmosphere and protection at enquiry stage.

Noble-metal cautions

R, S and B require ceramic—not metal—primary protection at high temperature. Guard against metal-vapour and silica contamination. Type B is unsuitable for low-temperature measurement and has low cold-junction sensitivity near ambient.

03 / Tolerance classes and standards

Standards control the signal

Tolerance class is a code-controlled selection input. The values below are stated at a 0 °C reference junction in accordance with IEC 60584-1:2013; 't' is the measured temperature in °C. [1]

Base-metal types — published Class 1 / 2 / 3 envelopes

Type	Class 1	Class 2	Class 3
K	–40 to +375 °C: ±1.5 °C; +375 to +1000 °C: ±0.004 t	–40 to +333 °C: ±2.5 °C; +333 to +1200 °C: ±0.0075 t	–167 to +40 °C: ±2.5 °C; –200 to –167 °C: ±0.015 t
N	–40 to +375 °C: ±1.5 °C; +375 to +1000 °C: ±0.004 t	–40 to +333 °C: ±2.5 °C; +333 to +1200 °C: ±0.0075 t	–167 to +40 °C: ±2.5 °C; –200 to –167 °C: ±0.015 t
J	–40 to +375 °C: ±1.5 °C; +375 to +750 °C: ±0.004 t	–40 to +333 °C: ±2.5 °C; +333 to +750 °C: ±0.0075 t	Not specified
E	–40 to +375 °C: ±1.5 °C; +375 to +800 °C: ±0.004 t	–40 to +333 °C: ±2.5 °C; +333 to +900 °C: ±0.0075 t	–167 to +40 °C: ±2.5 °C; –200 to –167 °C: ±0.015 t
T	–40 to +125 °C: ±0.5 °C; +125 to +350 °C: ±0.004 t	–40 to +133 °C: ±1.0 °C; +133 to +350 °C: ±0.0075 t	–67 to +40 °C: ±1.0 °C; –200 to –67 °C: ±0.015 t

Noble-metal types — published Class 1 / 2 / 3 envelopes

Type	Class 1	Class 2	Class 3
R / S	0 to +1100 °C: ±1.0 °C; +1100 to +1600 °C: $\pm(1 + 0.003 \times (t - 1100))$ °C	0 to +600 °C: ±1.5 °C; +600 to +1600 °C: ±0.0025 t	Not specified
B	Not specified	+600 to +1700 °C: ±0.0025 t	+600 to +800 °C: ±4.0 °C; +800 to +1700 °C: ±0.005 t

Order rule

Field 03 publishes CL1, CL2 or CL3. The selected class must be permitted for the ordered type and temperature envelope. Low-temperature Class 3 performance requires explicit purchase specification; standard conductor supply may not satisfy it without selected materials. [1]

04 / Cable identity and colour codes

Keep the circuit convention intact

Extension or compensating cable forms part of the assembly only when selected in Field 05. Loose cable beyond the assembly boundary is excluded from this catalogue scope.

Extension cable — X

Base-metal type-matched

Extension cable uses the same nominal alloys as the thermocouple, for example KX, JX, NX, TX and EX. Select when the circuit type and extension-grade temperature envelope are compatible. [2]

Compensating cable — C

Limited-band EMF match

Compensating cable uses dissimilar, lower-cost alloys matched over a defined conductor-temperature band. Typical identifiers include KCA/KCB, RCA/RCB and SCA/SCB. The limited conductor-temperature range is part of the application check. [2]

Published cable identification — Field 05

Code	Cable class	Type pairing	Catalogue control
N00	None	No integral cable	Assembly terminates at the selected connection head / entry.
KX1 / JX1 / TX1 / EX1 / NX1	Extension	K / J / T / E / N	Same nominal alloy system; final grade and insulation require order confirmation.
KCA / KCB	Compensating	K	Different compensating alloy and band; declare colour-code standard.
RCA / RCB / SCA / SCB	Compensating	R / S	Required noble-metal pairing principle; confirm declared application envelope.

Colour-code declarations

Convention	Negative core	Positive / outer identification	Order control
IEC 60584-3	White	Positive core uses the type colour; outer sheath normally follows that positive colour.	Declare IEC 60584-3; intrinsically safe circuit sheath treatment is application-specific.
ASTM E230/E230M	Red	Positive core uses the ASTM type colour.	Declare ASTM E230/E230M; do not mix conventions in one circuit.

Polarity warning

IEC negative is white; ASTM negative is red. Polarity, type designation and declared colour-code standard must be confirmed together before installation. [2] [3]

Type B integral cable is specified on the approved order. A copper-extension basis may be applied where appropriate, subject to the declared colour-code convention and application review.

05 / Construction and junction selection

Protect the sensor, then select the junction

MI assemblies use MgO insulation inside a metallic sheath. Rigid/tube constructions, ceramic primary protection and the surrounding mechanical ecosystem are selected through the published model code and the approved order documents.

Material and protection vocabulary — Field 06

Code	Material / protection	Selection control
304 / 316 / 31T	Stainless steel / 316Ti	Base-metal application compatibility and final process review.
321 / 347 / 310	Stabilised / high-temperature stainless steel	Select only within final ordered service envelope.
I60 / I61	Inconel 600 / Inconel 601	High-temperature alloy option; process compatibility is order-specific.
C610 / C799	Mullite / recrystallised alumina	Ceramic primary protection for noble-metal high-temperature configurations.

MI bend control

MI sheath diameter, alloy, heat history, tip construction and available bend radius are interdependent. The minimum bend radius and tip keep-out must be confirmed against the selected MI construction rather than inferred from the GU-RT RTD line.

Compression fitting note

Where selected, a PTFE ferrule is re-adjustable; a 316 stainless-steel ferrule sets permanently on first tightening. Confirm fitting material and installation method against the approved order data sheet.

Measuring-junction types — Field 02

GRD · Grounded

Junction welded to sheath tip. Fastest response among enclosed options. No electrical isolation from sheath.

INS · Ungrounded / insulated

Junction electrically isolated from sheath. Slower response; select where isolation or reduced noise coupling is required.

EXP · Exposed

Junction extends beyond the sheath. Fastest response; restricted to dry, non-corrosive, non-pressurised gas service.

Primary-protection selection control

Selection question	Controlled response
Base-metal or noble-metal element?	Select an appropriate metallic sheath for base-metal configurations; select C610 or C799 ceramic primary protection for high-temperature R, S or B configurations.
How is the sensor installed?	Confirm the process connection, thermowell basis where applicable, unsupported immersion, access and cable routing in the approved order documentation.
What establishes service capability?	The approved process envelope, selected material, sensor type, primary protection and final order data—not the illustrative cover visual or this general catalogue guidance.

06 / Model code and ordering system

Build the code from the sensing end

The protected masthead is repeated on the quick-reference card without modification. 'XXX' is used wherever the published field contains alphabetic or alphanumeric codes; only Field 07 is numeric-only.

01 XXX - 02 XXX - 03 XXX - 04 XXX - 05 XXX - 06 XXX - 07 nnnn - 08 XXX - 09 XXX - 10 XXX - 11 XXX - 12 XXX - 13 XXX - 14 XXX

Field	Mask	Code set	Definition	Selection control
01	XXX	K1...B2	Sensor type and simplex / duplex construction	1 = simplex; 2 = duplex. K, J, T, E, N, R, S, B are published types.
02	XXX	GRD / INS / EXP	Measuring junction	EXP is restricted to dry, non-corrosive, non-pressurised gas service.
03	XXX	CL1 / CL2 / CL3	Tolerance class	Match to the published IEC envelope and final process requirement.
04	XXX	IEC	Element standard	IEC 60584-1:2013.
05	XXX	N00 / X / C codes	Integral assembly cable	See page 5 for every published cable code and circuit convention.
06	XXX	304...C799	Sheath / primary protection	Select metallic or ceramic protection within the temperature, atmosphere and type gate.
07	nnnn	0001-9999	Immersion length in mm	Lengths > 2000 mm require X6 engineering review.

Field 07 review threshold

Enter immersion length in millimetres. Any unsupported immersion length greater than 2000 mm must include Field 14 = X6 and is subject to engineering review; thermowell mechanical design remains outside this catalogue scope.

06 / Model code and ordering system

Complete the mechanical and documentation definition

Shared GU mechanical fields retain the same disciplined vocabulary across the temperature-sensor family. The final head, cable entry, transmitter, certification and special execution are governed by the approved order documents.

Field	Mask	Code set	Definition	Selection control
08	XXX	000–250 / NU0...NU2	Neck	000–250 in mm; NU0 no neck; NU1/NU2 engineered neck execution.
09	XXX	M12 / M14 / HB1 / HB3 / HZ1 / HZ2 / HJ1 / HZD	Connection head	M12/M14 compact heads; HB1/HB3 terminal heads; HZ1/HZ2 selected hazardous-area families; HJ1 junction head; HZD display-window head.
10	XXX	P00 / THR / FLG / WLD	Process connection	No integral connection / threaded / flanged / welded; final connection detail is order-specific.
11	XXX	E00...E06	Cable entry	E00 none; E01–E05 single-entry execution; E06 twin M20 entry.
12	XXX	T0...T5 / T9	Transmitter	T0 none; T1–T5 selected transmitter execution; T9 engineering-review transmitter. A head is mandatory when T1–T5 or T9 is selected.
13	XXX	C0...C6	Certification / documentation	C0 standard documentation; C5 = EN 10204 3.1; C6 = EN 10204 3.2.
14	XXX	X0...X9	Special execution	X0 standard execution; X6 is mandatory for unsupported immersion > 2000 mm; X1–X5 and X7–X9 are project-assigned codes defined on the approved order.

Transmitter and entry pairing

T1–T5 and T9 require an ordered connection head. A duplex assembly or a transmitter configuration requiring two entries must select E06 twin M20 entry.

Documentation code pairing

C5 represents EN 10204 3.1 documentation. C6 represents EN 10204 3.2 documentation, requiring third-party witness as defined by the order scope.

07 / Selection controls

Decode completeness and rule traceability

The following code glossary closes every code used in the rules and examples. Undefined codes are not valid model-code tokens.

Short-form code glossary

Code group	Published tokens	Meaning
Type / construction	K1, K2, J1, J2, T1, T2, E1, E2, N1, N2, R1, R2, S1, S2, B1, B2	Letter identifies thermocouple type; 1 simplex; 2 duplex.
Junction	GRD, INS, EXP	Grounded, insulated / ungrounded, exposed.
Tolerance / standard	CL1, CL2, CL3, IEC	IEC 60584-1 tolerance class and reference standard.
Cable	N00, KX1, JX1, TX1, EX1, NX1, KCA, KCB, RCA, RCB, SCA, SCB	No integral cable, extension cable or compensating cable identity.
Protection	304, 316, 31T, 321, 347, 310, I60, I61, C610, C799	Metallic sheath or ceramic primary protection vocabulary.
Mechanical	0001-9999, 000-250, NU0-NU2, M12, M14, HB1, HB3, HZ1, HZ2, HJ1, HZD, P00, THR, FLG, WLD, E00-E06	Length / neck / head / process connection / cable entry.
Control / documentation	T0-T5, T9, C0-C6, X0-X9	Transmitter, certification / documentation, special execution. X1-X5 and X7-X9 are project-assigned special-execution codes defined on the approved order.

Model-code rule

A model code is valid only when every token resolves in this catalogue and every applicable gating rule is satisfied. Inquiries with incomplete process data, non-standard materials, special geometry, certifications or conditions outside the published envelope require X-field engineering review.

08 / Gating rules

Apply R1–R16 before releasing an enquiry

These rules are designed to prevent technically incompatible code combinations. The approved order data sheet remains the final authority.

Rule	Fields	Requirement
R1	01 / 06	R, S and B types require ceramic primary protection C610 or C799 for high-temperature selection; final compatibility is order-specific.
R2	01 / 06	K, J, T, E and N require a Field 06 metallic sheath or approved engineered protection. Material selection must be compatible with the stated atmosphere and temperature.
R3	01 / 03	CL1, CL2 or CL3 is permitted only when the selected type has a published IEC 60584-1 envelope at the intended temperature.
R4	02	EXP is permitted only for dry, non-corrosive, non-pressurised gas. Otherwise select GRD or INS.
R5	07 / 14	Field 07 > 2000 mm requires Field 14 = X6 engineering review. The threshold is also stated at Field 07.
R6	09 / 12	T1–T5 and T9 require a head code M12, M14, HB1, HB3, HZ1, HZ2, HJ1 or HZD.
R7	01 / 05	R, S and B high-temperature configurations require an appropriate compensating-cable selection where an integral cable is included; N00 is permitted only where no integral cable is selected.
R8	01 / 11	Duplex code `2` requires E06 twin M20 entry when integral cable / transmitter routing needs twin entry.
R9	11 / 12	T1–T5 and T9 require a compatible entry. E06 applies when twin-entry routing is required.
R10	10 / 06	THR, FLG and WLD configurations require final process-connection and material definition in the approved order documents.
R11	05	KX1, JX1, TX1, EX1 and NX1 use the matching base-metal extension designation. Do not use an X-type code with a different thermocouple type.
R12	05	KCA/KCB pair with K; RCA/RCB pair with R; SCA/SCB pair with S. Declare IEC 60584-3 or ASTM E230/E230M colour-code convention on the order.
R13	13	C5 means EN 10204 3.1; C6 means EN 10204 3.2. Do not substitute one for the other.
R14	01 / 06 / 14	Any type / protection / process environment combination outside published selection guidance requires an X-field engineering review.
R15	08 / 09 / 11	NU1, NU2, HZ1, HZ2 and HZD are application-selected executions; confirm mechanical fit, ingress protection and certification scope in the approved order documents.
R16	All fields	Every token must resolve in the catalogue glossary. A missing, altered or undefined token invalidates the selection code pending engineering clarification.

09 / Worked examples

Validate every token — examples 1 and 2

Worked codes are illustrative selection paths. They are not released manufacturing configurations and must be reconciled to the final order data sheet.

Example 1 · General-purpose Type K MI grounded assembly

K1 – GRD – CL2 – IEC – KX1 – 316 – 0600 – 100 – HB1 – THR – E01 – T0 – C0 – X0

Fields	Tokens	Decoded selection
01–04	K1 / GRD / CL2 / IEC	Simplex Type K; grounded junction; IEC Class 2; IEC 60584-1 reference.
05–07	KX1 / 316 / 0600	Integral Type K extension cable; 316 sheath; 600 mm immersion length.
08–11	100 / HB1 / THR / E01	100 mm neck; terminal head; threaded process connection; selected single entry.
12–14	T0 / C0 / X0	No transmitter; standard documentation; standard special-execution field.

Rule check: R2, R3, R10, R11 and R16 apply. The 600 mm immersion length does not trigger R5.

Example 2 · Type N long-immersion assembly with engineering review

N1 – INS – CL2 – IEC – NX1 – I61 – 2400 – NU1 – HB3 – FLG – E01 – T0 – C0 – X6

Fields	Tokens	Decoded selection
01–04	N1 / INS / CL2 / IEC	Simplex Type N; insulated junction; IEC Class 2; IEC 60584-1 reference.
05–07	NX1 / I61 / 2400	Integral Type N extension cable; Inconel 601; 2400 mm immersion length.
08–11	NU1 / HB3 / FLG / E01	Engineered neck; terminal head; flanged process connection; selected single entry.
12–14	T0 / C0 / X6	No transmitter; standard documentation; engineering review for > 2000 mm unsupported immersion.

Rule check: R2, R3, R5, R10, R11, R15 and R16 apply. X6 is mandatory because 2400 mm exceeds the Field 07 review threshold.

Example validation record

Before issuing an enquiry, retain the code, intended temperature range, atmosphere, process connection, unsupported immersion basis, cable convention, required documentation and all X-field reviews together. The model code is an auditable selection summary, not a substitute for the approved order data sheet.

09 / Worked examples

Validate every token — examples 3 and 4

The examples below demonstrate duplex / transmitter pairing and noble-metal / ceramic / compensating-cable pairing. Final construction and approvals remain order-specific.

Example 3 · Duplex Type J with transmitter and twin entry

J2 – INS – CL2 – IEC – JX1 – 321 – 0850 – 075 – HZD – THR – E06 – T2 – C5 – X0

Fields	Tokens	Decoded selection
01–04	J2 / INS / CL2 / IEC	Duplex Type J; insulated junctions; IEC Class 2; IEC 60584-1 reference.
05–07	JX1 / 321 / 0850	Integral Type J extension cable; 321 sheath; 850 mm immersion length.
08–11	075 / HZD / THR / E06	75 mm neck; display-window head; threaded process connection; twin M20 entry.
12–14	T2 / C5 / X0	Selected transmitter execution; EN 10204 3.1 documentation; standard special-execution field.

Rule check: R2, R3, R6, R8, R9, R10, R11, R13 and R16 apply. The duplex / transmitter routing uses E06 twin M20 entry.

Example 4 · Type S ceramic-sheath high-temperature assembly

S1 – INS – CL2 – IEC – SCB – C799 – 1000 – NU2 – HB3 – FLG – E01 – T0 – C6 – X4

Fields	Tokens	Decoded selection
01–04	S1 / INS / CL2 / IEC	Simplex Type S; insulated junction; IEC Class 2; IEC 60584-1 reference.
05–07	SCB / C799 / 1000	Type S compensating cable; recrystallised-alumina primary protection; 1000 mm immersion length.
08–11	NU2 / HB3 / FLG / E01	Engineered neck; terminal head; flanged process connection; selected single entry.
12–14	T0 / C6 / X4	No transmitter; EN 10204 3.2 documentation; project-defined special execution.

Rule check: R1, R3, R7, R10, R12, R13, R15 and R16 apply. C799 and SCB make the noble-metal / protection / compensating-cable relationship explicit.

Worked-example limitation

Example codes demonstrate rule logic only. They do not release a material compatibility decision, a pressure boundary, a thermowell design, a hazardous-area configuration, a calibration scope or a manufacturing drawing. Use X-field review where the catalogue does not contain the required controlled decision.

10 / QA, thermowell pairing and project definition

Establish the evidence before manufacture

Inspection, documentation and project review are selected to the approved order scope. This catalogue does not claim a universal inspection package.

QA / inspection capability

Capability	Catalogue position
NDE	Radiographic testing as applicable; dye-penetrant testing on welds as applicable to scope.
PMI	OES and XRF capability. OES reads carbon; XRF cannot read carbon. Method selection is defined by material and scope.
Weld condition	Hardness and ferrite measurement where applicable to duplex / austenitic welds.
Documentation	C5 = EN 10204 3.1. C6 = EN 10204 3.2, third-party witnessed as required by the approved order scope.
Referenced standards	ASTM A240 / A262 / A923, NACE MR0175 / ISO 15156, Norsok M-650 / M-601 and API RP 578 may apply where specifically invoked by the order.

No over-claim

Referenced standards are not blanket certification claims. Their applicability, acceptance criteria, witness requirements and documentation are defined by the approved order data sheet and project requirements.

Thermowell pairing

Reference only

Thermocouples are commonly installed in thermowells. Select the thermowell from the applicable Globe United thermowell datasheet / catalogue. Thermowell mechanical design and wake-frequency calculation are outside this GU-TC catalogue scope.

Project-definition inputs

State the process temperature range, operating pressure, medium / atmosphere, installation orientation, required immersion, thermowell basis where applicable, type / tolerance, junction, required cable convention, area classification, head / entry, transmitter, material compatibility, inspection scope and documentation.

Excluded scope

thermowell mechanical design/wake-frequency calculation (cross-reference the thermowell datasheet/catalogue), extension/compensating cable supplied loose beyond the assembly boundary, and any application outside the published type/temperature envelopes without X-field engineering review.

Order-document precedence

Final supplied configuration, materials, dimensions, limits, process connections, accessories, inspection scope, and documentation are governed exclusively by the approved order data sheet, approved drawings, and nameplate.

Order-handover control

Handover item	Required controlled record
Technical basis	Process range, atmosphere, pressure boundary basis, installation position, thermowell selection where applicable, and required immersion.
Model-code evidence	All fourteen fields resolved, all R-rules checked, and any special execution or unsupported immersion action recorded.
Release evidence	Approved order data sheet, approved drawing where required, documentation code, inspection scope and nameplate requirements.

11 / Quick-reference card

GU-TC model code and document control

Retain this page with the enquiry. The masthead below is identical to the ordering page and is a protected controlled string.

01 XXX – 02 XXX – 03 XXX – 04 XXX – 05 XXX – 06 XXX – 07 nnnn – 08 XXX – 09 XXX – 10 XXX – 11 XXX – 12 XXX – 13 XXX – 14 XXX

Field	Selection group	Quick reference
01–04	Sensing definition	Type / simplex-duplex; junction; IEC tolerance class; IEC 60584-1:2013.
05–07	Signal and immersion	Integral cable identity; sheath / ceramic protection; immersion length in mm — > 2000 mm requires X6.
08–11	Mechanical definition	Neck; head; process connection; cable entry — E06 is twin M20 entry.
12–14	Control and documentation	Transmitter; certification / documentation — C5 3.1, C6 3.2; special execution.

Document control

Item	Controlled value
Document	GUF.CAT.TC.0826
Revision	REV 02
Issue date	24 August 2026
Prepared / reviewed / approved	RN / AK / UM
Revision description	Verification revision: junction visual cleanup; confirmed contact line retained

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Final authority

Final supplied configuration, materials, dimensions, limits, process connections, accessories, inspection scope, and documentation are governed exclusively by the approved order data sheet, approved drawings, and nameplate.

References

[1] IEC 60584-1:2013, Thermocouples — Part 1: EMF specifications and tolerances. [2] IEC 60584-3, Thermocouples — Part 3: Extension and compensating cables — tolerances and identification system. [3] ASTM E230/E230M, Standard Specification and Temperature-Electromotive Force (EMF) Tables for Standardized Thermocouples. [4] EN 10204, Metallic products — Types of inspection documents. [5] API RP 578, Material Verification Program for New and Existing Alloy Piping Systems.

Revision history: Rev 02 · 24 August 2026 · Verification revision: junction visual cleanup; confirmed contact line retained · Prepared RN · Reviewed AK · Approved UM.

Rev 01 · 24 August 2026 · Audit-closure revision for cover composition, two-column layout, contact rendering, icon contrast and order-definition notes · Prepared RN · Reviewed AK · Approved UM.

Rev 00 · 24 August 2026 · First controlled release · Prepared RN · Reviewed AK · Approved UM. Drafts 00–0n superseded by controlled release at Rev 00.

Enquiry release check

Confirm the type and tolerance envelope, junction, integral cable identity and declared colour-code convention, protection system, immersion length, head / entry / transmitter pairing, documentation code and all X-field items before submitting the enquiry for controlled review.