Bently Nevada 16710-35

Engineering Installation, Diagnostic and Acceptance Guide

Bently Nevada 16710-35 is a 35 ft armored interconnection cable for a 177230 Seismic Transmitter loop.

01 Job scope and identity

Complete model	16710-35
Product type	Armored seismic-transmitter interconnection cable
Manufacturer	Bently Nevada
Technical source	Bently Nevada 177230 Seismic Transmitter Datasheet, 177232 Rev. U

Field decisions

1 Establish identity

Capture the full marking, installed companion components and baseline before disconnection.

2 Inspect interfaces

Verify mounting, cable, connector, armor, approval and environmental boundaries.

3 Fit the exact chain

Preserve the documented probe-cable-Proximitor or sensor-monitor relationship.

4 Prove response

Use the approved stopped-machine and operating acceptance procedure.

5 Record as left

Save markings, configuration, test values and operating observations.

Installation relationships

Signal relationship	The cable connects the 177230 loop-powered seismic transmitter to the assigned PLC, DCS or SCADA analog input.
Ordering relationship	The 35 code selects a 35 ft armored cable within the documented 3 to 99 ft range.
Technical reference	Bently Nevada 177230 Seismic Transmitter Datasheet, 177232 Rev. U.

Pre-work evidence

Installed drawing	Record the approved cabinet, rail, slot, terminal, cable and system references that govern 16710-35.
Complete marking	Capture the complete order identity and every revision or approval marking on the delivered item.
Mechanical reference	Record mounting position, fasteners, connector orientation, access clearance and support points.
Electrical interfaces	Confirm supply, signal, bus, terminal and protective-conductor assignments against the installed drawing.
Configuration state	Record jumpers, switches, addresses, firmware or project settings that apply to this hardware.

02 Pre-installation readiness

Model-specific installation decisions

Exact identity

16710-35 and every delivered revision or approval marking must be recorded before removal.

Installed system

177230 seismic-transmitter interconnect cabling companion components, channel assignment and approved machine reference must remain traceable.

Mechanical baseline

Record the as-found mounting datum, reach, lock position, target clearance, routing and connector support.

Electrical baseline

Record the applicable stopped-machine gap, bias, continuity or channel value together with test conditions.

As-left configuration

Document the final mechanical position, cable protection, connector condition and complete companion-component identities.

Functional release

Compare the final monitor indication and controlled operating response with the approved baseline before handover.

Installation precautions

Confirm the complete marking

Match 16710-35, cable length, connector and conductor construction with the installed record.

Isolate before testing

Place the monitor channel and machine in the approved maintenance state before disconnecting or checking continuity.

Protect the connector

Keep contacts dry and clean; do not use the connector or terminal lugs as a pulling point.

Support the route

Preserve bend clearance, armor support, abrasion protection and separation from damaging heat or sharp edges.

Verify conductor mapping

Label each conductor and shield before removal, then compare end-to-end continuity with the applicable wiring drawing.

Prove the complete channel

After reconnection, verify the expected monitor indication and operating response before return to service.

Companion and baseline records

Companion hardware	Record the connected drive, rack, motor, transducer, I/O base or control unit as applicable.
As-found baseline	Capture relevant voltages, currents, states, counts, fault history or channel response before removal.
Operating baseline	Record the controlled functional result after the complete system is returned to service.

Pre-installation release gates

Identity gate	The delivered marking is 16710-35 and all visible revision or approval details have been photographed.
Drawing gate	The installed asset, channel, mounting reference and companion-component assignments are identified on the approved record.
Mechanical gate	Mounting surface, thread or support points, access clearance and target relationship are suitable for the selected configuration.
Interface gate	Connector, conductor, shield, terminal and protective-conductor condition have been inspected before connection.
Route gate	Cable or lead routing preserves bend radius, strain relief, contamination protection and separation from damaging surfaces.
Baseline gate	The applicable stopped-machine reading and operating observation have been captured with units and test conditions.

03 Installation and commissioning

Controlled installation sequence

01 Isolate	Place the monitored machine and channel in the approved maintenance state; prove the required isolation.
02 Photograph	Capture 16710-35, the installed datum, connector, route and companion-component markings.
03 Measure	Record mechanical position and the applicable stopped-machine electrical reading before removal.
04 Compare	Check delivered identity, interfaces and evidence against the approved drawing and spare-parts record.
05 Install	Fit without twisting the lead; preserve thread engagement, target clearance, bend radius and strain relief.
06 Set point	Establish the operating gap or datum only with the approved stopped-machine procedure.
07 Prove	Compare local reading, monitor indication and controlled operating response with the accepted baseline.
08 Handover	Record as-left values, photographs, deviations, responsible technician and release approval.

Commissioning acceptance criteria

Mechanical fit	35 ft armored interconnect for the 177230 Seismic Transmitter. Confirm the installed datum and available target travel before final tightening.
Lead or interface fit	Custom lengths from 3 to 99 ft in 1 ft increments. Inspect the mating interface and provide independent route support.
System position	The cable links the 177230 transmitter to its assigned control-system input; physical length, delivered terminations, routing and loop polarity govern application.
As-found reference	Record the applicable stopped-machine reading and the exact companion-component identities before disconnection.
Static acceptance	Restore the documented gap, bias, continuity or channel value with the machine in the approved test state.

Functional acceptance	Compare local indication, monitor response and the controlled operating observation with the accepted machine baseline.
Deviation control	Withhold release when the delivered marking, mounting datum, interface, system length or response differs from the approved record.
Release evidence	Retain the complete marking, test conditions, measured results, photographs, reviewer and maintenance-record reference.

Acceptance test points

After mechanical fit	Record final mounting datum, engagement, lock position, target clearance and route support.
After interface connection	Confirm contact seating, conductor or shield assignment and continuity or bias as applicable.
Before energization	Reconcile companion identities, total chain configuration and monitor or collector channel assignment.
Initial energized state	Observe the local channel value and status without declaring acceptance from open-circuit voltage alone.
Controlled functional proof	Compare the returned indication and machine response with the approved operating baseline.
Final record	Attach photographs, measured values, deviations, approvals and the maintenance-record location.

04 Diagnostics and escalation

Which transmitter context applies to 16710-35?	Use the cable only where the installed record identifies a 177230 Seismic Transmitter and the assigned PLC, DCS or SCADA analog input.
How should the selected length of 16710-35 be verified?	Confirm the 35 code and measure the delivered route against the specified 35 ft length before removing the installed cable.
What termination inspection is required for 16710-35?	Compare both delivered terminations with the approved loop drawing and inspect contacts, insulation, strain relief and environmental sealing.
How should the armor of 16710-35 be treated?	Support the armor independently, preserve the documented shield or drain termination and do not use armor as a signal return.

Additional diagnostic decisions

What continuity test is appropriate for 16710-35?	With the transmitter loop isolated, test each documented path end to end and check for unintended conductor-to-shield or conductor-to-armor connections.
What routing evidence is needed for 16710-35?	Record bend clearances, armor support, heat exposure, abrasion protection and separation from damaging power or process routes.
How is the loop proved after installing 16710-35?	Reconnect according to the approved polarity and compare the 4 to 20 mA indication and raw vibration signal with the accepted machine baseline.
What handover data should accompany 16710-35?	Retain the complete marking, physical length, termination map, continuity results, as-left route photographs and controlled loop-response result.

Escalation triggers

Identity conflict	Stop if the complete marking, suffix, revision or approval identity differs from the approved record.
Host mismatch	Escalate if the rack, carrier, backplane, terminal unit or controller assignment is not documented for 16710-35.
Interface damage	Do not energize with bent contacts, damaged insulation, loose retainers, contamination or heat discoloration.
Environmental breach	Review any exposure beyond the documented temperature, vibration, humidity, contamination or enclosure boundary.
Unapproved substitution	Do not transfer ratings or compatibility from an adjacent order code without manufacturer evidence.
Configuration conflict	Stop if hardware settings, firmware, channel assignment or project configuration disagree with the installed record.
Unstable measurement	Investigate noise, drift, intermittent status or inconsistent readings before replacing another component.
Failed functional proof	Keep the asset in the approved maintenance state until the complete acceptance sequence is passed and recorded.

05 Handover and evidence package

As-left verification worksheet

Exact delivered marking	16710-35; photograph and record any additional label detail.
Installed asset reference	Machine, bearing, train, channel and drawing identifiers.

Mechanical as found	Reach, lock position, gap reference, cable route and connector support.
Static reading as found	Gap, bias, continuity or channel value appropriate to the installed system.
Companion identities	Extension cable, Proximitor or conditioner and monitor channel markings.
Mechanical as left	Final reach, lock position, target clearance and route protection.
Static reading as left	Final gap, bias, continuity or channel value with test conditions.
Operating proof	Monitor response and machine observation accepted by the responsible authority.

Evidence quality controls

Traceability	Each value is tied to 16710-35, the asset location, test state, instrument and date.
Repeatability	The same approved method and comparable operating state are used for before-and-after readings.
Resolution	Recorded precision does not exceed the capability of the instrument or source document.
Reference state	Stopped, energized, loaded and process-running observations are clearly distinguished.
Change control	Every changed setting, connection or mechanical datum has an approved reason and reviewer.
Retention	Evidence remains accessible with the maintenance record for future troubleshooting and replacement review.

Model-specific application limits

Selected cable length	35 ft (approximately 10.7 m)
Ordering boundary	Armored 16710 cable; 3 to 99 ft range in 1 ft increments
Loop output	4 to 20 mA from the companion 177230 transmitter
Transmitter range options	0 to 12.7, 25.4 or 50.8 mm/s
Frequency options	10 Hz to 1 kHz RMS or 3 Hz to 1 kHz peak

Verified related product references

Related product	Bently Nevada 84661-96
Related product	Bently Nevada 330102-00-28-10-02-05
Related product	Bently Nevada 330104-00-16-10-02-00
Related product	Bently Nevada 330500-00-01

Engineering contact

Discuss the exact marking and installed application with Apter Power.
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