	PRODUCT STANDARD HYDRO PROJECTS ENGINEERING	44154159055
		Rev. 00
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PURCHASE SPECIFICATION OF NON CONTACT TYPE LIMIT SWITCH (PROXIMITY TYPE)		

1. DESCRIPTION:

Non-contact type limit switch work on the principle of inductive proximity. It provides the PNP type contact on detection of ferrous metal object in the proximity range.

2. APPLICATION:

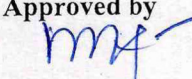
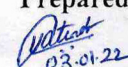
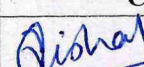
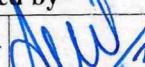
These Limit switches are required to detect the position of Main Inlet Valve, Bypass Valve, Maintenance seal and service seal in hydropower house.


3. SCOPE OF SUPPLY:

SR. NO.	ITEM DESCRIPTION	REMARKS
1	Non Contact Type Limit Switch (Proximity Type)	For Quantities : Please refer ENQUIRY

4. SPECIFICATIONS:

a) Sensing technology	-	Inductive proximity
b) Type	-	Cylindrical , M30
c) Sensor case material	-	Nickel plated brass / SS / Non corrosive metal
d) Sensor front face	-	PPS / PBT / PBTB / As Manuf. Standard
e) Target material	-	Ferrous
f) Body	-	Shielded
g) Mounting	-	Flush mountable
h) Sensing nominal distance	-	8 mm - 10 mm
i) Supply voltage	-	24 VDC
j) Enclosure protection	-	IP 67 / IP 68
k) Ambient temperature range	-	(-) 10 'C to (+) 50 'C
l) Electrical connection	-	Connector
m) Connecting cable	-	Prewired connector type with 10 meter cable length to suit sensor connection
n) Output	-	DC,3 Wire , PNP type contact , 'NO' (Normally Open)

Rev. No.	Date of Rev.	Remarks	Approved by			
			 Manish Sahu Sr. DGM-HPE			
			Prepared by	Checked by	Date of issue	
			 Yatendra Singh Dy. Mgr.-HPE	 Vishal Namdeo Mgr.-HPE	 Amit Pandey DGM-HPE	03.01.22 (Rev 00) 03.01.2022

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PURCHASE SPECIFICATION OF NON CONTACT TYPE LIMIT SWITCH (PROXIMITY TYPE)		

- | | | |
|------------------------------|---|---------------------------------------------------------------------------------------------------|
| o) Status indication | - | LED indication |
| p) Load current | - | 100 mA or more |
| q) Power supply protection | - | Reverse polarity protection |
| r) Self locking nuts | - | Two nos. on limit switch of M30 |
| s) Compliance with standards | - | EN 60947-5-2:2007 /
EN 60947-5-2/A1:2012 /
IEC 60947-5-2:2007 /
IEC 60947-5-2 AMD 1:2012 |

5. DOCUMENTS TO BE FURNISHED:

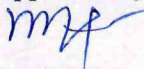
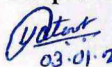
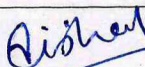
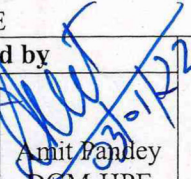
Along with the offer:


- (a) Catalogues giving all the technical particulars, wiring termination, mounting details with model code de-codification etc.
- (b) List of deviations, if any. Otherwise, it shall be understood that the vendor is meeting all the requirements specified by us.

Vendor to note that if above documents are not furnished along with the offer; the offer shall be liable for outright rejection.

After placement of order:

- (a) Supplier has to submit the drawing / technical data sheet showing over all dimensions, mounting details and constructional details of limit switch (proximity type) for our approval.
- (b) Supplier has to submit QAP for Proximity switch for our approval in line with our QAP.
- (c) Above drawing / documents & QAP to be submitted within 3 weeks of placement of PO & subsequent reply on our comments (if any) to be submitted within a week.

Rev. No.	Date of Rev.	Remarks	Approved by		
			 Manish Sahu Sr. DGM-HPE		
			Prepared by	Checked by	Date of issue
			 03.01.22 Yatendra Singh Dy. Mgr.-HPE	 Vishal Namdeo Mgr.-HPE	 03.01.22 Amit Pandey DGM-HPE
					(Rev 00) 03.01.2022

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PURCHASE SPECIFICATION OF NON CONTACT TYPE LIMIT SWITCH (PROXIMITY TYPE)		

At the time of supply:

- (a) 2 copies of test certificates / Calibration certificate and guarantee certificates to BHEL items. 1 copy of the above documents shall be put inside the case/ package.
- (b) Shipping / packing lists of the Limit switch (Proximity type).

6. TEST CERTIFICATES:

- (a) Calibration certificates issued by an ISO 17025 accredited certified Lab / Test certificate from the manufacturer for each Limit switch are required.

7. INSPECTION & TESTING:

Functional test of each limit switch is to be carried out and certificate for the same to be furnished.

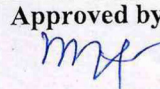
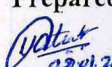
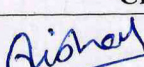
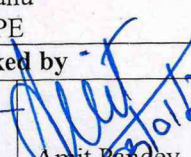
8. GUARANTEE:

The item must be guaranteed for trouble free operation, good workmanship for a period of 18 months from the date of dispatch.


9. PACKAGING:

Each limit switch shall be packed in individual carton with silica gel, adequate cushioning material and waterproof cover to avoid the movement of the internals and ensure that the instrument is capable of withstanding the transit conditions without damages.

*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*

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			 Manish Sahu Sr. DGM-HPE		
			Prepared by	Checked by	Date of issue (Rev 00)
			 Yatendra Singh Dy. Mgr.-HPE	 Vishal Namdeo Mgr.-HPE	 Amit Pandey DGM-HPE
					03.01.2022

769025/2022/HEP-HPE41500

MANUFACTURER'S Logo		MANUFACTURER'S Name and Address		SAMPLE QUALITY ASSURANCE PLAN			Project : PO /Indent No:			
				Item : Non-Contact Type Limit Switches (Proximity Type)		QP No. : QA/HPE/241516458/001 Rev.No. : 00 Date :29-03-2022 page : 01 OF 01				
				SUB-System: Governing system						
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT / ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	1	2	10.
1	NON CONTACT TYPE LIMIT SWITCHES (PROXIMITY TYPE)	1) MODEL CODE VERIFICATION 2) FUNCTIONAL TEST CERTIFICATE	Major	Performance	100%	-Technical Specification - Approved Drawings / Approved Data Sheet	TC	P	W	TC
2	NON CONTACT TYPE LIMIT SWITCHES (PROXIMITY TYPE)	1) PACKING AND IDENTIFICATION	Major	Performance	100%	-Technical Specification	TC / CoC	P	V	TR / CoC
		LEGEND: 1: MANUFACTURER/SUB-SUPPLIER 2: BHEL/ NOMINATED INSPECTION AGENCY P: PERFORM W: WITNESS AND V: VERIFICATION RR – REVIEW OF RECORD IR – INTERNAL RECORD JIR – JOINT INSPECTION REPORT								
QA-HYDRO		ENGINEERING- HPE								
(PREPARED & REVIEWED)				Accepted by (Vendor' QC representative)						

Note#1: Vendor has to submit the manufacturer's quality assurance plan in line with BHEL sample quality plan after placement of PO for approval.

Note#2: For order quantity 'N', quantum of BHEL/ third party witness shall be as follows (for $N \leq 10$ -100% ; For $10 < N < 50$ -20% ; $50 < N < 100$ - 10% ; $N > 100$ -5%). Minimum 5 nos. to be witnessed in any case irrespective to quantity 'N'.

Note#3: Packaging to be strictly done as per BHEL technical specification clause no. 9. A CoC (Certificate of Conformance) to be issued by vendor in this regard. Any deviation in packaging will make the items liable for rejection or acceptance after suitable deduction decided by designated BHEL committee.

Note#4: Third party to verify final documentation, essentially having an index sheet, co-relating page numbers with respective QAP clauses.