

Plant 1.0 MTPA ALUMINA REFINERY STREAM-5	Client NALCO	Contract Code NAL	Document ID 6695-ELT-G00-EC-0021	Contract No. 66-6695
	TECHNICAL SPECIFICATIONS – LOCAL CONTROL STATIONS (FLAMEPROOF & INDUSTRIAL TYPE)			 नेशनल एल्युमिनियम कम्पनी लिमिटेड National Aluminium Company Ltd.
				Rev 00 Page 1 of 2

<p>tkIS India / Vendor</p> <p>Category Codes (Submission Purpose)</p> <table style="width: 100%;"> <tr><td><input type="checkbox"/></td><td>1</td><td>For Approval</td></tr> <tr><td><input type="checkbox"/></td><td>2</td><td>For Review / Comments</td></tr> <tr><td><input type="checkbox"/></td><td>3</td><td>For Information</td></tr> <tr><td><input type="checkbox"/></td><td>4</td><td>For Engineering</td></tr> <tr><td><input type="checkbox"/></td><td>5</td><td>For Enquiry</td></tr> <tr><td><input type="checkbox"/></td><td>6</td><td>For Order Placement</td></tr> <tr><td><input type="checkbox"/></td><td>7</td><td>Final & Approved</td></tr> <tr><td><input type="checkbox"/></td><td>8</td><td>Released for Construction</td></tr> </table> <hr/> <p>Acceptance Codes (Approval Codes)</p> <table style="width: 100%;"> <tr><td><input type="checkbox"/></td><td>1</td><td>Approved</td></tr> <tr><td><input type="checkbox"/></td><td>2</td><td>Approved for Manufacturing / Fabrication with Comments as marked</td></tr> <tr><td><input type="checkbox"/></td><td>3</td><td>Not Approved / Resubmit</td></tr> <tr><td><input type="checkbox"/></td><td>4</td><td>Retained for Information / Records</td></tr> <tr><td><input type="checkbox"/></td><td>5</td><td>Reviewed</td></tr> <tr><td><input type="checkbox"/></td><td>6</td><td>Reviewed as Noted / Resubmit</td></tr> </table> <p>Remarks for AC2 : This marked-up drawings is hereby approved for fabrication / manufacturing and shall be re-submitted after revision. This drawing should be revised only to the extent of tkIS India / Owner / Client comments. Any other changes made by you will not be considered unless clearly highlighted in covering letter asking for approval.</p> <p>This approval / review does not absolve the supplier from the full responsibility for design and fabrication.</p> <p>Date : ___/___/___ Name : _____</p>	<input type="checkbox"/>	1	For Approval	<input type="checkbox"/>	2	For Review / Comments	<input type="checkbox"/>	3	For Information	<input type="checkbox"/>	4	For Engineering	<input type="checkbox"/>	5	For Enquiry	<input type="checkbox"/>	6	For Order Placement	<input type="checkbox"/>	7	Final & Approved	<input type="checkbox"/>	8	Released for Construction	<input type="checkbox"/>	1	Approved	<input type="checkbox"/>	2	Approved for Manufacturing / Fabrication with Comments as marked	<input type="checkbox"/>	3	Not Approved / Resubmit	<input type="checkbox"/>	4	Retained for Information / Records	<input type="checkbox"/>	5	Reviewed	<input type="checkbox"/>	6	Reviewed as Noted / Resubmit	<p>tkIS India / Owner / Client</p> <p>Category Codes (Submission Purpose)</p> <table style="width: 100%;"> <tr><td><input type="checkbox"/></td><td>1</td><td>For Approval</td></tr> <tr><td><input type="checkbox"/></td><td>2</td><td>For Review / Comments</td></tr> <tr><td><input type="checkbox"/></td><td>3</td><td>For Information</td></tr> <tr><td><input checked="" type="checkbox"/></td><td>4</td><td>For Engineering</td></tr> <tr><td><input type="checkbox"/></td><td>5</td><td>For Enquiry</td></tr> <tr><td><input type="checkbox"/></td><td>6</td><td>For Order Placement</td></tr> <tr><td><input type="checkbox"/></td><td>7</td><td>Final & Approved</td></tr> <tr><td><input type="checkbox"/></td><td>8</td><td>Released for Construction</td></tr> </table> <hr/> <p>Acceptance Codes (Approval Codes)</p> <table style="width: 100%;"> <tr><td><input type="checkbox"/></td><td>1</td><td>Approved</td></tr> <tr><td><input type="checkbox"/></td><td>2</td><td>Approved for Manufacturing / Fabrication with Comments as marked</td></tr> <tr><td><input type="checkbox"/></td><td>3</td><td>Not Approved / Resubmit</td></tr> <tr><td><input type="checkbox"/></td><td>4</td><td>Retained for Information / Records</td></tr> <tr><td><input type="checkbox"/></td><td>5</td><td>Reviewed</td></tr> <tr><td><input type="checkbox"/></td><td>6</td><td>Reviewed as Noted / Resubmit</td></tr> </table> <p>Date : ___/___/___ Name : _____</p>	<input type="checkbox"/>	1	For Approval	<input type="checkbox"/>	2	For Review / Comments	<input type="checkbox"/>	3	For Information	<input checked="" type="checkbox"/>	4	For Engineering	<input type="checkbox"/>	5	For Enquiry	<input type="checkbox"/>	6	For Order Placement	<input type="checkbox"/>	7	Final & Approved	<input type="checkbox"/>	8	Released for Construction	<input type="checkbox"/>	1	Approved	<input type="checkbox"/>	2	Approved for Manufacturing / Fabrication with Comments as marked	<input type="checkbox"/>	3	Not Approved / Resubmit	<input type="checkbox"/>	4	Retained for Information / Records	<input type="checkbox"/>	5	Reviewed	<input type="checkbox"/>	6	Reviewed as Noted / Resubmit
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Rev.	Status	Description	Date	Prepared	Date	Checked	Date	Approved	AC	
Based on: PIN-LES-ELT-1052, Rev.0, 12-2015				Barcode					Category Code: -04	
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Plant 1.0 MTPA ALUMINA REFINERY STREAM-5	Client NALCO	Contract Code NAL	Document ID 6695-ELT-G00-EC-0021	Contract No. 66-6695	
	TECHNICAL SPECIFICATIONS – LOCAL CONTROL STATIONS (FLAMEPROOF & INDUSTRIAL TYPE)			 नेशनल एल्युमिनियम कम्पनी लिमिटेड National Aluminium Company Ltd.	
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INDEX SHEET

The document Cover Sheet indicates revisions made in this document along with the purpose of issue of the revised document. The details of revisions made in the enclosures of this document are listed in the table of *Contents* below and the enclosures listed therein are an integral part of this document.

CONTENTS

Part	Docu Size	Description	No. of Pages	Rev. No.	Revised Clauses
	A4	Index Sheet and Status of Revision	2	00	-
Part-I	A4	General Specifications	2	00	-
Part-II	A4	Design Data Sheet	3	00	-
Annexure-1		Reference LCS Drawings	10	00	-

Plant 1.0 MTPA ALUMINA REFINERY STREAM-5	Client NALCO	Contract Code NAL	Document ID 6695-ELT-G00-EC-0021	Contract No. 66-6695	
	LOCAL CONTROL STATIONS Part-I - General Specifications			 नेशनल एल्युमिनियम कम्पनी लिमिटेड National Aluminium Company Ltd.	
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1.0 INTRODUCTION

The design, manufacturing, inspection, testing and performance of Local Control Stations (LCS) shall comply with all currently applicable Indian & IEC Standards and specific Standards & Codes mentioned under clause 'Codes' of Part-II of this specification.

2.0 GENERAL REQUIREMENTS

2.1 Construction

Flameproof LCS enclosure shall have two separate sections for the push button/ switch elements and the terminals. The cover shall be fixed to the body by high tensile steel socket headed allen screws with a pair of plain and spring washers. The heads of these screws shall be effectively shrouded to permit its operation with special tools only.

All the components in the LCS, i.e. Push button elements, terminals, ammeter, selector switches shall be mounted on the body of LCS only. Only the operating knobs and handles of switches shall be mounted on the cover.

2.2 Cable Entries

Two threaded entries shall be provided on each LCS at the bottom for fixing cable glands, sizes of which are indicated in enclosed drawings. On flameproof LCS threaded flameproof metallic plug shall be provided for sealing one of the cable entries. Similarly on industrial LCS threaded plug shall be provided for the same purpose; material of threaded plug shall be same as enclosure material.

2.3 Earthing

The enclosure shall be provided with one external and one internal earthing terminal, each of 6 mm diameter, complete with nut and spring washers for termination of 6 sq. mm solid or stranded conductor.

In addition to this, suitable earthing link shall be provided between body and cover of LCS. The earthing terminals shall be clearly identified by the symbol " \perp " marked in legible and indelible manner on or adjacent to the terminal.

2.4 Nameplate

Nameplates shall be made from PVC sheet, rear engraved perspex with white letters of size minimum 3 mm on black background. All nameplates shall be identical in size for interchangeability and shall be fixed with screws on the cover. Caution nameplate marking as per relevant IS for flameproof enclosures shall also be provided. Inscription on the nameplates shall be as per the details indicated in the *Control Switch List* which will be issued after approval of LCS drawings by LSTK Contractor. A typical nameplate detail is shown below:

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	LOCAL CONTROL STATIONS Part-I - General Specifications			 नेशनल एल्युमिनियम कम्पनी लिमिटेड National Aluminium Company Ltd.
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		KW RATING	TON NO.	
SWGR NAME	H2 MCC-1	150.00 kW	21AKM001	
FEEDER NAME	1F1	HYDROGEN COMPRESSOR		SERVICE DESCRIPTION

2.5 *Painting*

The enclosure (metallic) shall be powder coated. The paint film thickness shall be min. 60 microns. Paint shall be as described in Part-II.

3.0 **FACTORY ACCEPTANCE TEST & DESPATCH**

Inspection and testing shall be carried out based on latest revision of this specification and approved vendor drawings certified for construction. In case of any ambiguity between vendor drawing and order specification, the requirement indicated in technical specifications shall govern.

One sample of each type of LCS shall be made available to LSTK Contractor/Owner/Consultant for approval before commencement of manufacture of entire quantity, if desired. Routine tests shall be carried out on each LCS and LSTK Contractor/Owner/Consultant shall witness the routine tests on 20 % of the total quantity of each type of LCS. Type tests shall be carried out as specified in Part-II.

Fifteen days advance notice shall be given for carrying out final inspection and testing.

Vendor/LSTK Contractor shall ensure that all meters associated with testing of the equipment are calibrated by a competent testing authority and the calibration certificates are valid at the time of carrying out the testing of equipment.

After completion of inspection and testing, Vendor/LSTK Contractor shall furnish all as-built documents in required number of sets. The Release Order for dispatch of material will be issued only after receipt of final documents.

4.0 **PERFORMANCE GUARANTEE**

Vendor shall guarantee the equipment supplied by him for *Twelve months' satisfactory operation from the date of commissioning or Eighteen months from the date of dispatch*, whichever is earlier. In case of any failure in the bought out items same shall be replaced with new one within the period of guarantee. Moreover the Owner reserves the right to use rejected/failed equipment/component till it is replaced.

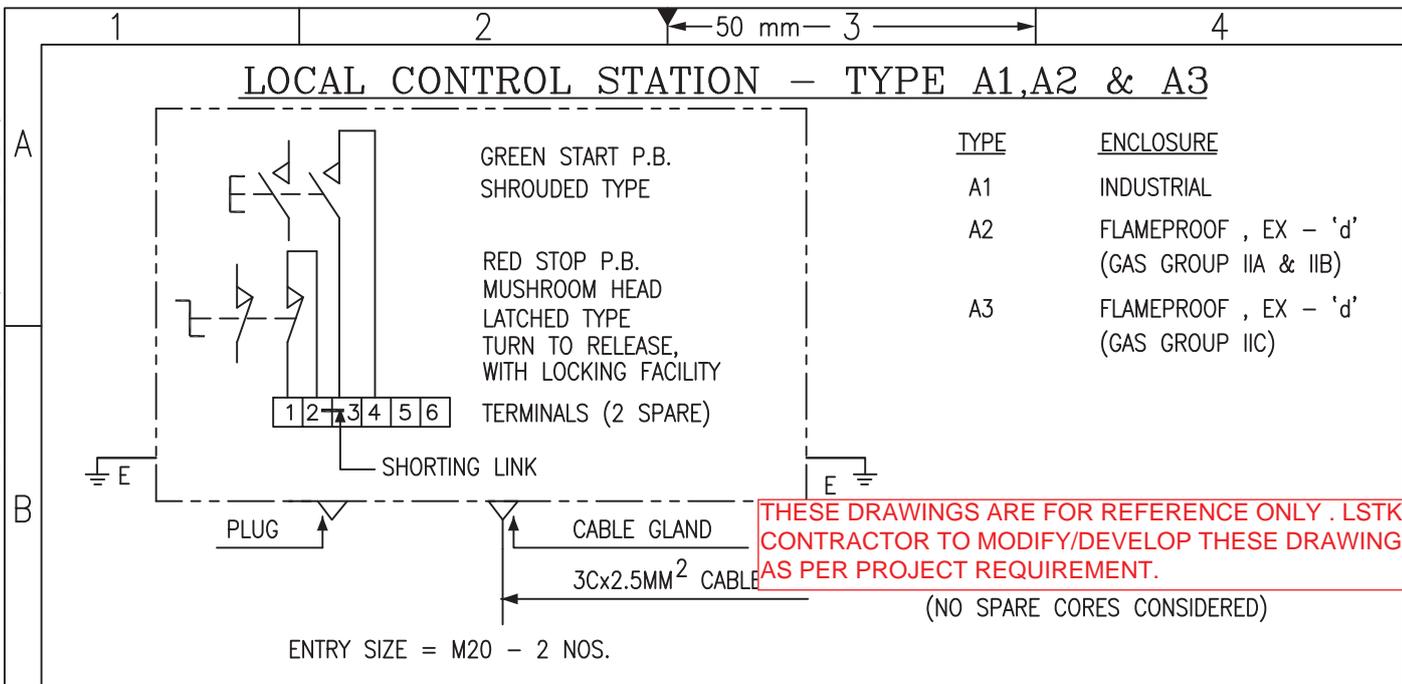
 नालको NALCO नेशनल एल्युमिनियम कंपनी लिमिटेड National Aluminium Company Ltd.		LOCAL CONTROL STATIONS		Code	NAL	
				Contract no.	66-6695	
		PART - II DESIGN DATA SHEET		Doc.	6695-ELT-G00-EC-0021	
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GENERAL	001	Make	: As per Vendor list - Electrical			
	002	Location	: OUTDOOR			
	003	Material of Construction , Degree of Protection , Thickness of Enclosure :				
	004	a) Industrial	: Stainless Steel(SS 304), IP65			
		b) Flameproof	: Die Cast Aluminium (LM6), IP55			
	005	Canopy Material	: Same as Enclosure Material/ sheet steel painted			
	006	Final Paint Shade	:			
	007	Hardware Material	: Stainless Steel(SS 304)			
	008	Hazardous area classification	: *			
	009		:			
SITE CONDITIONS	010		:			
	011	Ambient Temperature (Max./Min.)	: _____ °C			
	012	Design Ambient Temperature	:			
	013		:			
	014	Altitude	: _____ m above MSL			
	015		:			
	016	Plant Environment	:			
	017		:			
	018		:			
CODES	019	IEC 60947 (Relevant parts): specification for low voltage switchgear and control gear				
	020	IS 4794 for push button stations				
	021	IEC 60079 for flameproof enclosures for electrical apparatus				
	022	Indian Electricity Act				
	023	CEA Regulations				
	024	Fire Insurance Authority Regulations				
	025					
COMPONENTS	026	PUSH BUTTON				
	027	Make	: Siemens/ L&T/Teknik/ Hensel / Vaishno			
	028	Type	: Start-Spring Return			
	029		: Stop-Mushroom head Stayput Type			
	030	Locking facility for stop PBs to be provided	: Yes			
	031	TERMINAL BLOCK				
	032	Make	: Elmex/ Connectwell/ Allen Bradley / Fuji			
	033	Type & Size	: Clip-on, 2.5 sq. mm			
	034		:			
	035	Minimum distance between TBs & cable entry	: 50 mm			

As per design basis attached elsewhere in tender

 नालको NALCO नेशनल एल्युमिनियम कम्पनी लिमिटेड National Aluminium Company Ltd.		LOCAL CONTROL STATIONS		Code		NAL	
				Contract no.		66-6695	
 thyssenkrupp		PART - II DESIGN DATA SHEET		Doc.		6695-ELT-G00-EC-0021	
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COMPONENTS		INTERNAL WIRING					
	036	Voltage grade	: 650 V				
	037	Conductor & Size	: Electrolytic grade stranded copper, min. 2.5 sq.mm				
	038						
	039	Termination	: With tinned copper lugs				
		AMMETER					
	040	Make	: AE/ SIMCO/ IMP/ Rishabh/ MECO				
	041	Type / Dimensions	: 72x72 mm				
	042						
	043	Accuracy class	: 1.0				
	044	CT secondary current range	: 1A				
	045	Scale graduation	:				
		a) Up to 1.2 FLC	: Linear				
		b) Beyond 1.2 FLC	: Suppressed scale up to eight times FLC				
	046	Special requirement	:				
		a) Red mark at FLC to be provided	: Yes				
		b) Ammeter indication range	: As per Primary rated current of CT				
		SELECTOR SWITCH					
	047	Make	: Kaycee/Siemens/L&T/Recom/Vaishno/Gem Telergon				
	048	No. of positions	: *				
	049	Type of handle	: *				
	050	Integral legend plate to be provided	: Yes				
		INDICATING LAMPS					
	051	Make	: Tecknik/ L&T/ Siemens /Schneider/Altos				
	052	Type & Wattage	: Clustered LED, _____ W *				
	053		:				
		BREAKER SWITCH					
	054	Make	: Kaycee/ Areva/ Recom/ Vaishno/ Gem Telergon				
	055	Type & No. of positions	: 3 Position, Momentary, Trip-Neutral-Close				
	056						
057	Type of handle	: *					
058	Integral legend plate to be provided	: Yes					
059							
060							
FACTORY ACCEPTANCE TEST	061	Routine test	:				
		a) Physical & dimensional checks					
		b) Insulation resistance test before & after HV test with 1000 V megger					
		c) Continuity & operation test					
		d) HV test at 2 kV for one minute					
	062	Type test	:				
		a) Hydrotesting : On one sample flameproof LCS casting of each type / Type test certificate.					
		b) IP-65 test : On one sample of each type of LCS / Type test certificate.					
063							

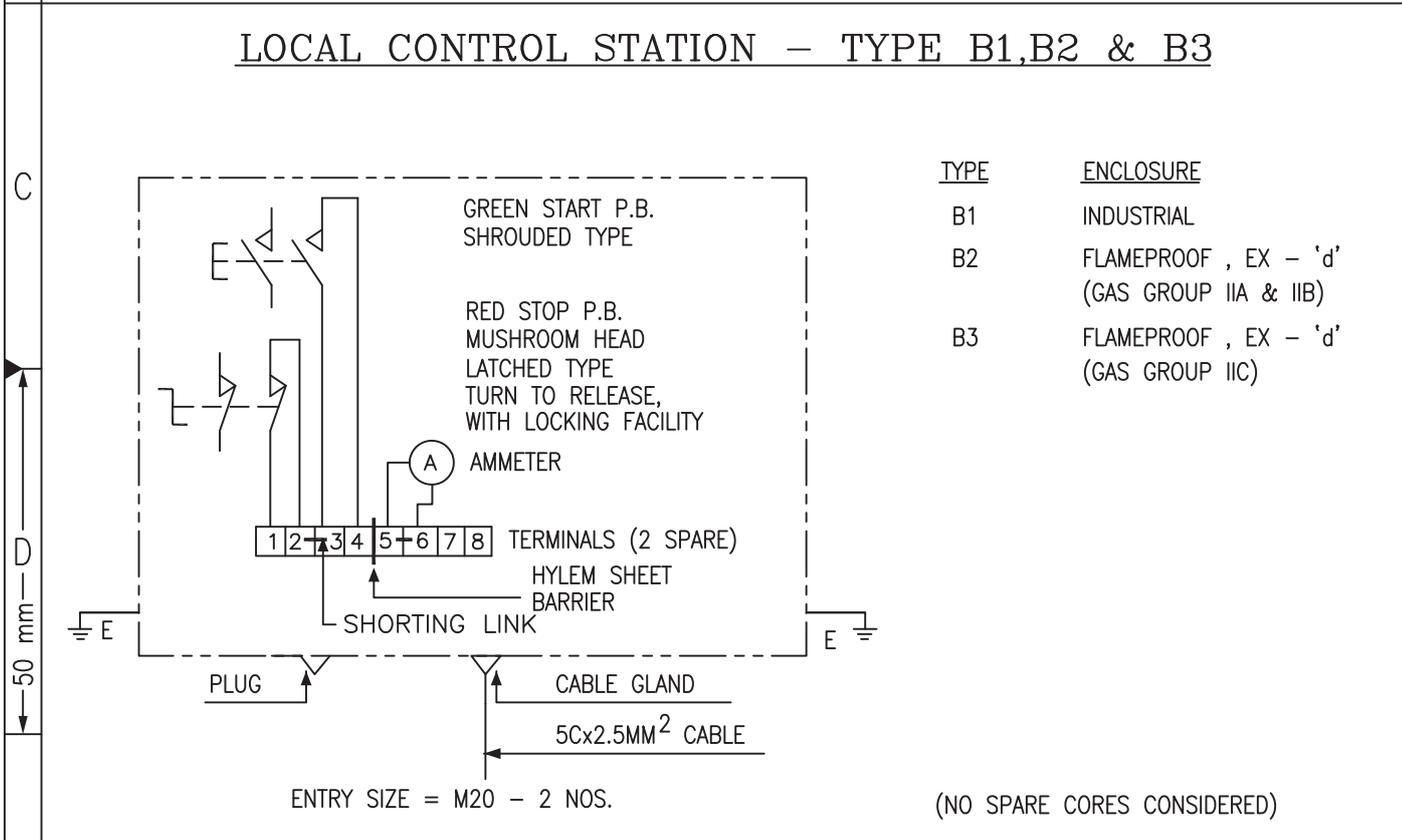
ANNEXURE-1

UHL_BO_ISO_A4_P_E_TKSIIndia.dwg / AG03_UHL_BO_ISO_A4_P.dwg / 10.10.2014



THESE DRAWINGS ARE FOR REFERENCE ONLY . LSTK CONTRACTOR TO MODIFY/DEVELOP THESE DRAWINGS AS PER PROJECT REQUIREMENT.

(NO SPARE CORES CONSIDERED)

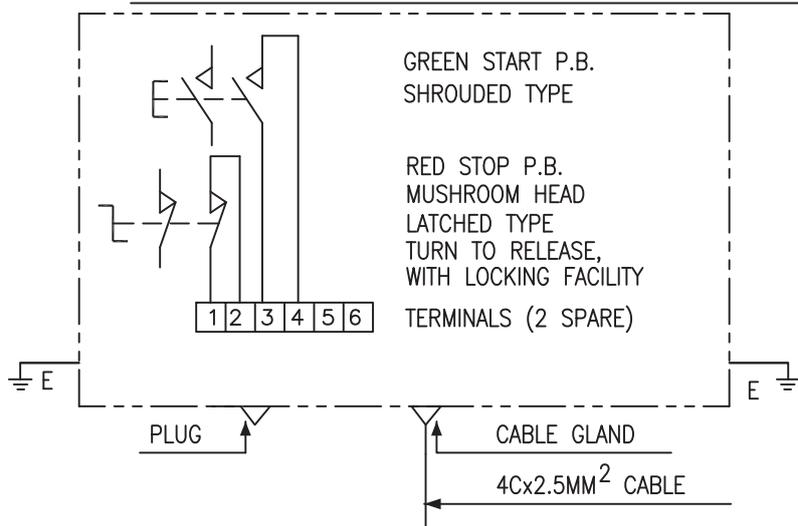


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							Store Location: Folder		
							Store Name: LCS-AB		
Pro. Unit		TON		Group		Type of Document		Sheet	
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Con. Unit		Scale		Order No.		ThyssenKrupp Industrial Solutions (India) <small>© Copyright 2015. All rights reserved. ThyssenKrupp Industrial Solutions (India) Private Limited</small>			
							Description		
							LCS-CONTROL WIRING DIAGRAM TYPE A & B		
ISO A4		Date		Name					
Drawn		22.12.15		RDK					
Prepared		22.12.15		VMS					
Checked		22.12.15		VMS					
Approved		22.12.15		RPM					

QAD No. PIN-ELP-ELT-3003, Rev.00

LOCAL CONTROL STATION – TYPE A11,A21 & A31

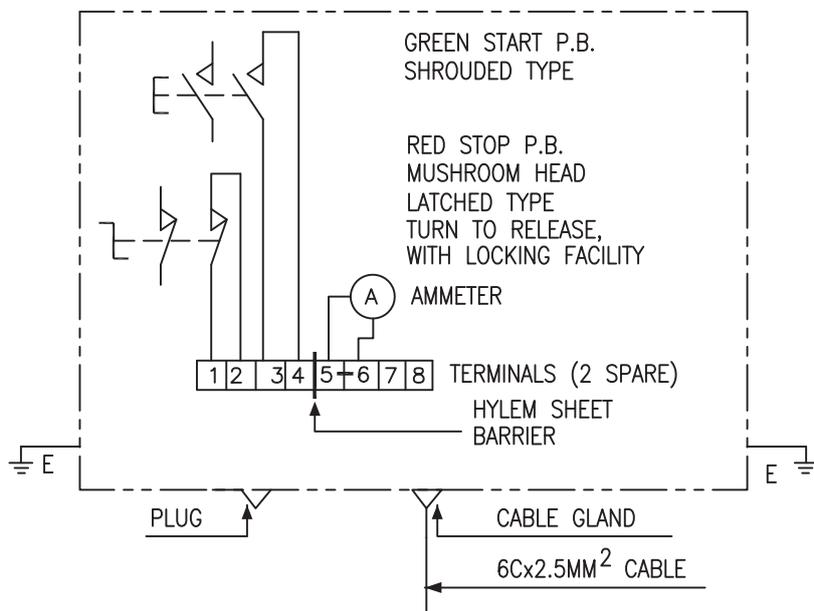


TYPE	ENCLOSURE
A11	INDUSTRIAL
A21	FLAMEPROOF , EX - 'd' (GAS GROUP IIA & IIB)
A31	FLAMEPROOF , EX - 'd' (GAS GROUP IIC)

ENTRY SIZE = M20 - 2 NOS.

(NO SPARE CORES CONSIDERED)

LOCAL CONTROL STATION – TYPE B11,B21 & B31



TYPE	ENCLOSURE
B11	INDUSTRIAL
B21	FLAMEPROOF , EX - 'd' (GAS GROUP IIA & IIB)
B31	FLAMEPROOF , EX - 'd' (GAS GROUP IIC)

ENTRY SIZE = M20 - 2 NOS.

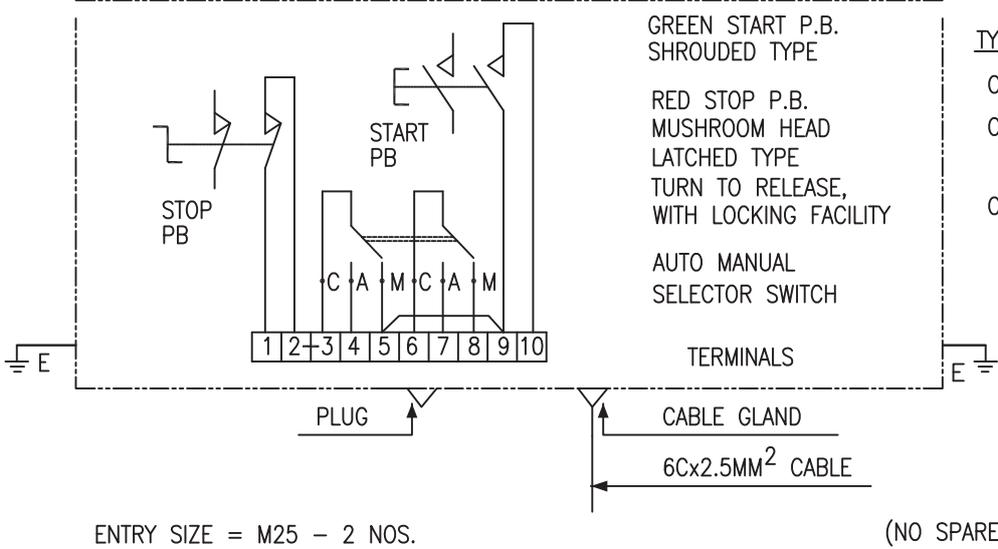
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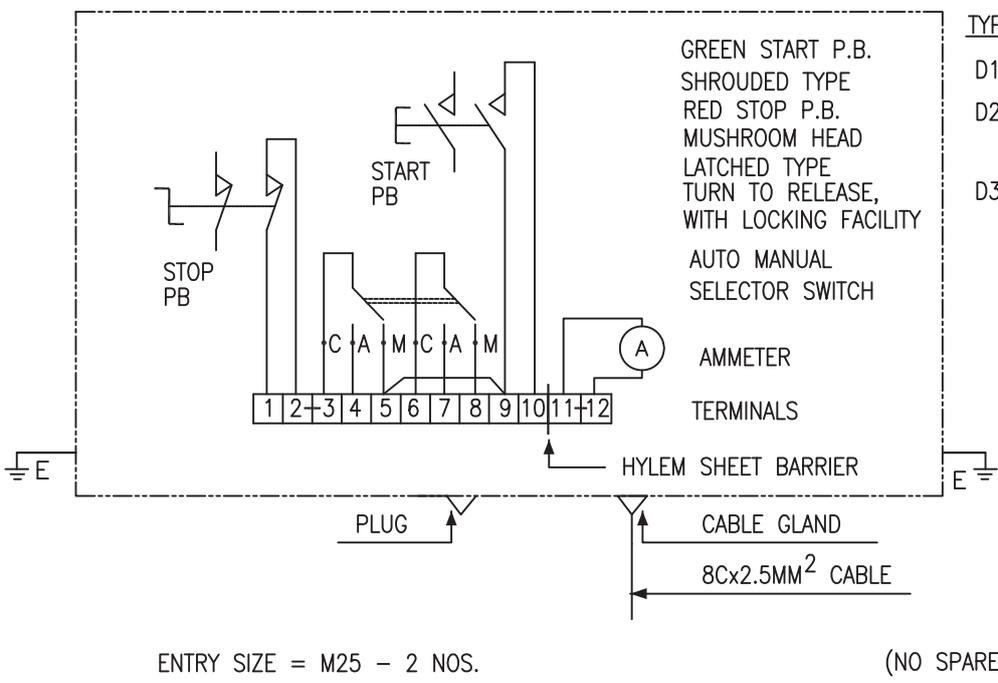
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12.07.16	VMS	
12.07.16	VMS	
12.07.16	RPM	

LOCAL CONTROL STATION – TYPE C1,C2 & C3



TYPE	ENCLOSURE
C1	INDUSTRIAL
C2	FLAMEPROOF , EX - 'd' (GAS GROUP IIA & IIB)
C3	FLAMEPROOF , EX - 'd' (GAS GROUP IIC)

LOCAL CONTROL STATION – TYPE D1,D2 & D3



TYPE	ENCLOSURE
D1	INDUSTRIAL
D2	FLAMEPROOF , EX - 'd' (GAS GROUP IIA & IIB)
D3	FLAMEPROOF , EX - 'd' (GAS GROUP IIC)

Code	Contract No.	Document ID	Part	Rev. 00
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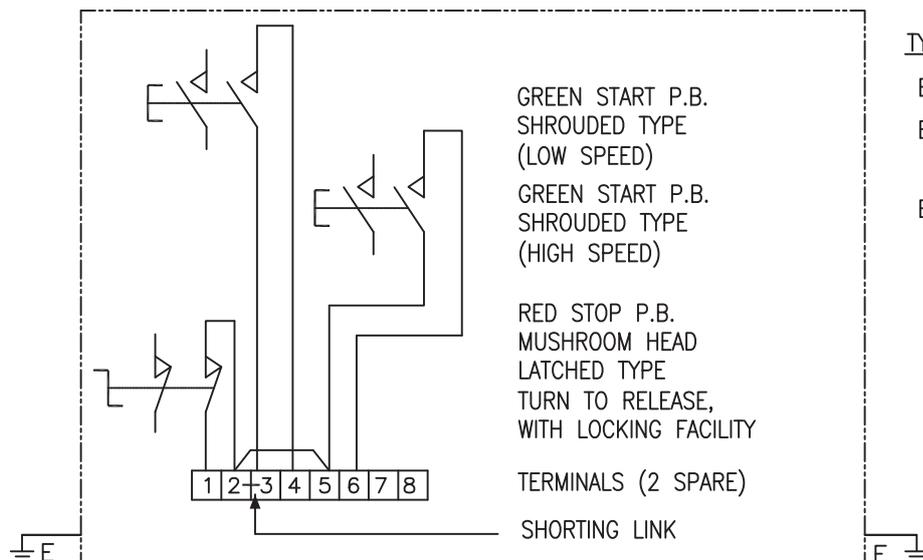
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	Date	Name	Description
Drawn	22.12.15	RDK	LCS-CONTROL WIRING DIAGRAM TYPE C & D
Prepared	22.12.15	VMS	
Checked	22.12.15	VMS	
Approved	22.12.15	RPM	

LOCAL CONTROL STATION – TYPE E1,E2 & E3

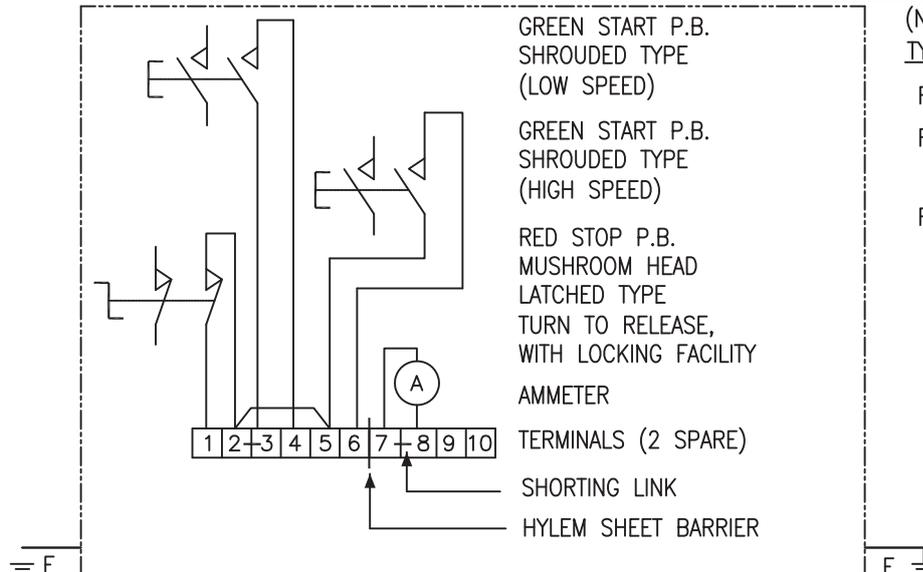


TYPE	ENCLOSURE
E1	INDUSTRIAL
E2	FLAMEPROOF , EX - 'd' (GAS GROUP IIA & IIB)
E3	FLAMEPROOF , EX - 'd' (GAS GROUP IIC)



ENTRY SIZE = M20 - 2 NOS.

LOCAL CONTROL STATION – TYPE F1,F2 & F3



(NO SPARE CORES CONSIDERED)

TYPE	ENCLOSURE
F1	INDUSTRIAL
F2	FLAMEPROOF , EX - 'd' (GAS GROUP IIA & IIB)
F3	FLAMEPROOF , EX - 'd' (GAS GROUP IIC)



ENTRY SIZE = M25 - 2 NOS.

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Code	Contract No.		Document ID				Part	Rev.					
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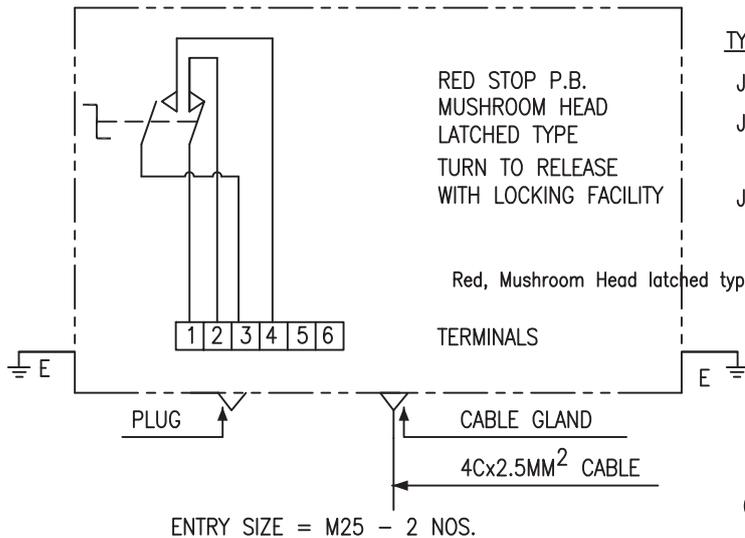
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22.12.15	VMS	
22.12.15	RPM	

UH_BO_ISO_A4_P_E_TKISIndia.dwg / AG03_UH_BO_ISO_A4_P.dwg / 10.10.2014

LOCAL CONTROL STATION – TYPE J1, J2 & J3



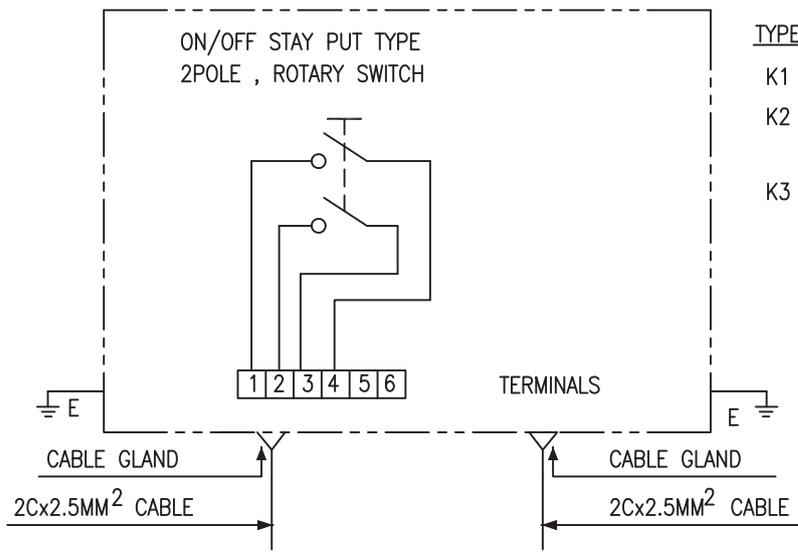
TYPE	ENCLOSURE
J1	INDUSTRIAL
J2	FLAMEPROOF , EX - 'd' (GAS GROUP IIA & IIB)
J3	FLAMEPROOF , EX - 'd' (GAS GROUP IIC)

Red, Mushroom Head latched type, turn to release with locking facility (1 NO + 1 NC contact))

(NO SPARE CORES CONSIDERED)

ENTRY SIZE = M25 – 2 NOS.

LOCAL CONTROL STATION – TYPE K1, K2 & K3



TYPE	ENCLOSURE
K1	INDUSTRIAL
K2	FLAMEPROOF , EX - 'd' (GAS GROUP IIA & IIB)
K3	FLAMEPROOF , EX - 'd' (GAS GROUP IIC)

(NO SPARE CORES CONSIDERED)

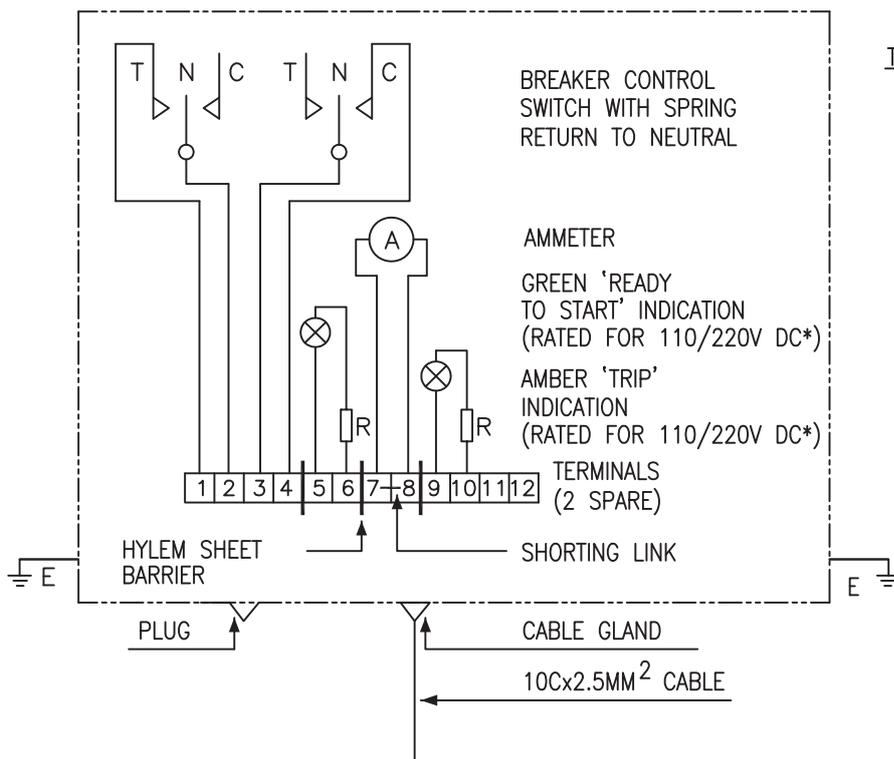
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Code		Contract No.		Document ID				Part	Rev.		
0	22.12.15	RDK	RDK	22.12.15	VMS	22.12.15	RPM	ISSUED AS STANDARD	Cat. Code	Acc. Code	Status
Rev.	Date	Name	Date	Name	Date	Name	Description	Acc. Code			
BAR-Code								Store Location: Server/Share			
								Store Location: Folder			
								Store Name LCS-JK			
Pro. Unit		TON		Group		Type of Document		Sheet		1 / 1	
Con. Unit		Scale		Order No.		ThyssenKrupp Industrial Solutions (India)		Copyright 2015 : All rights reserved		ThyssenKrupp Industrial Solutions (India) Private Limited	
Date		Name		Description							
Drawn		22.12.15		RDK		LCS-CONTROL WIRING DIAGRAM TYPE J & K					
Prepared		22.12.15		VMS							
Checked		22.12.15		VMS							
Approved		22.12.15		RPM							

QAD No. PIN-ELP-ELT-3003, Rev.00

ISO A4

LOCAL CONTROL STATION – TYPE L1,L2 & L3



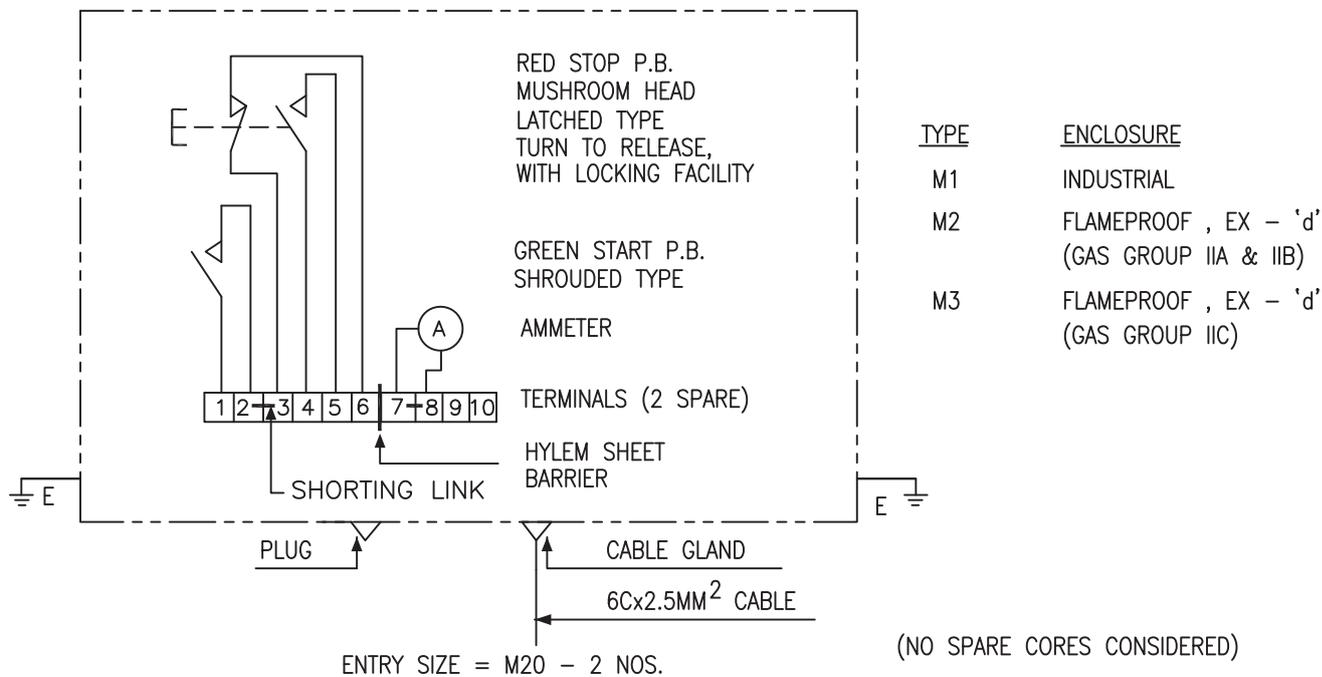
TYPE	ENCLOSURE
L1	INDUSTRIAL
L2	FLAMEPROOF , EX – 'd' (GAS GROUP IIA & IIB)
L3	FLAMEPROOF , EX – 'd' (GAS GROUP IIC)

ENTRY SIZE = M25 – 2 NOS.

(NO SPARE CORES CONSIDERED)
* PROJECT SPECIFIC

Code		Contract No.			Document ID			Part	Rev.
0	22.12.15	RDK	RDK	22.12.15	VMS	22.12.15	RPM	ISSUED AS STANDARD	00
Rev.	Date	Name	Date	Name	Date	Name	Description	Acc. Code	Status
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Pro. Unit		TON		Group		Type of Document		Sheet	
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Con. Unit		Scale		Order No.		ThyssenKrupp Industrial Solutions (India) <small>© Copyright 2015. All rights reserved. ThyssenKrupp Industrial Solutions (India) Private Limited</small>			
							Description		
							LCS-CONTROL WIRING DIAGRAM TYPE L		
Date		Name							
Drawn		22.12.15 RDK							
Prepared		22.12.15 VMS							
Checked		22.12.15 VMS							
Approved		22.12.15 RPM							

LOCAL CONTROL STATION – TYPE M1, M2 & M3



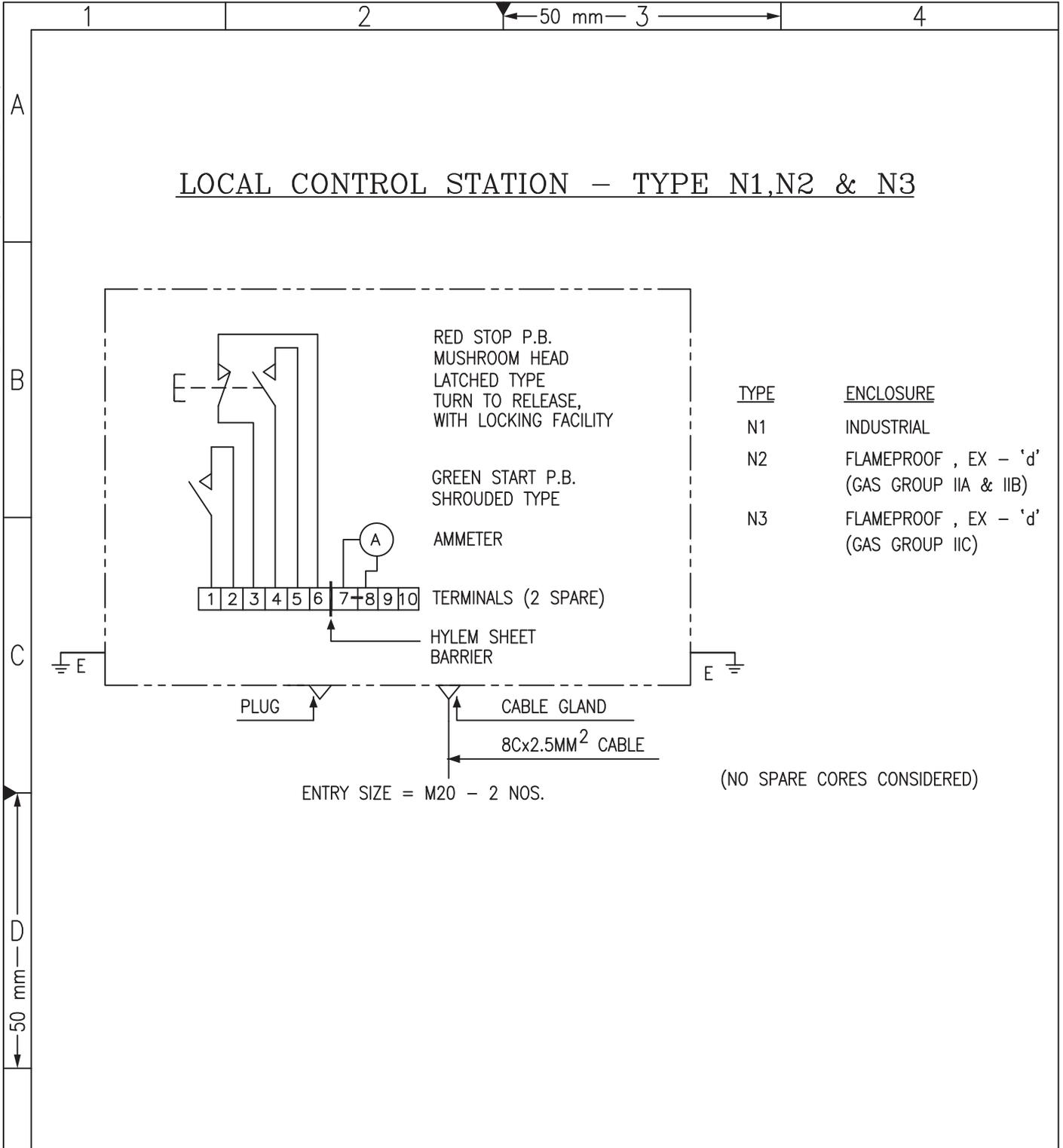
50 mm

Code	Contract No.	Document ID	Part	Rev. 00
0	13.07.16 LDK MNH	13.07.16 VMS	ISSUED AS STANDARD	
Rev.	Date	Name	Date	Name
	Drawn/Prepared	Checked	Approved	

BAR-Code	Store Location: Server/Share
	Store Location: Folder
	Store Name LCS-M

Pro. Unit	TON	Group	Type of Document	Sheet 1 / 1
Con. Unit	Scale	Order No.	ThyssenKrupp Industrial Solutions (India) <small>© Copyright 2015. All rights reserved. ThyssenKrupp Industrial Solutions (India) Private Limited</small>	

	Date	Name	Description
Drawn	13.07.16	LDK	LCS-CONTROL WIRING DIAGRAM TYPE M
Prepared	13.07.16	MNH	
Checked	13.07.16	VMS	
Approved	13.07.16	RPM	



TYPE	ENCLOSURE
N1	INDUSTRIAL
N2	FLAMEPROOF , EX - 'd' (GAS GROUP IIA & IIB)
N3	FLAMEPROOF , EX - 'd' (GAS GROUP IIC)

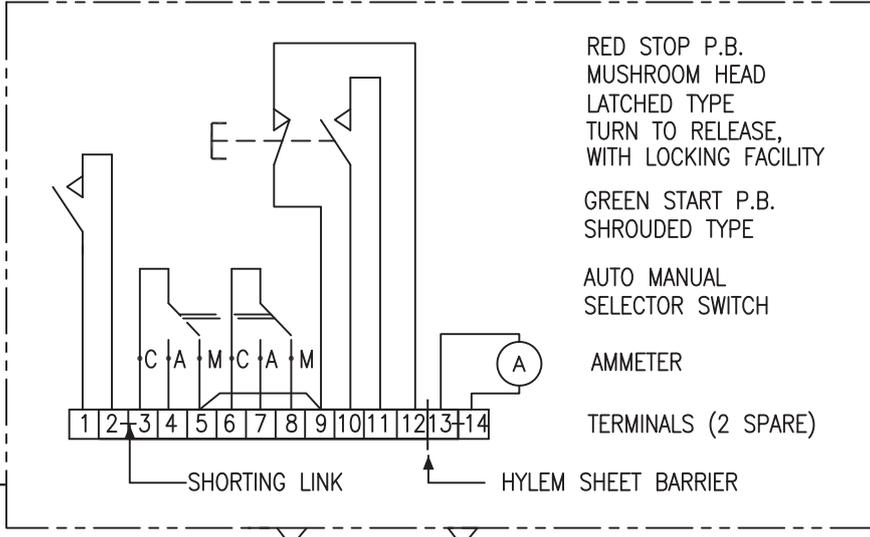
ENTRY SIZE = M20 - 2 NOS.

(NO SPARE CORES CONSIDERED)

Code		Contract No.				Document ID				Part	Rev.
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Rev.	Date	Name	Date	Name	Date	Name	Description	Acc. Code	Acc. Code	Status	
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Drawn		13.07.16		LDK		LCS-CONTROL WIRING DIAGRAM TYPE N					
Prepared		13.07.16		MNH							
Checked		13.07.16		VMS							
Approved		13.07.16		RPM							

ISO A4

LOCAL CONTROL STATION – TYPE 01,02 & 03



TYPE	ENCLOSURE
01	INDUSTRIAL
02	FLAMEPROOF , EX - 'd' (GAS GROUP IIA & IIB)
03	FLAMEPROOF , EX - 'd' (GAS GROUP IIC)

ENTRY SIZE = M20 – 2 NOS.

(NO SPARE CORES CONSIDERED)

50 mm

Code		Contract No.				Document ID				Part	Rev.
0	13.07.16	LDK	MNH	13.07.16	VMS	13.07.16	RPM	ISSUED AS STANDARD			00
Rev.	Date	Name	Date	Name	Date	Name	Description	Acc. Code	Cat. Code	Acc. Code	Status
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Pro. Unit		TON		Group		Type of Document		Sheet			
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Con. Unit		Scale		Order No.		ThyssenKrupp Industrial Solutions (India) <small>© Copyright 2015. All rights reserved. ThyssenKrupp Industrial Solutions (India) Private Limited</small>					
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Drawn		13.07.16		LDK							
Prepared		13.07.16		MNH							
Checked		13.07.16		VMS							
Approved		13.07.16		RPM							